

## SEQUENCE LISTING

&lt;110&gt; E. I. du Pont de Nemours and Company

&lt;120&gt; Isolation and Uses of Ryanodine Receptors

&lt;130&gt; BB1533 PCT

&lt;150&gt; 60/412,795

&lt;151&gt; 2002-09-23

&lt;150&gt; 60/427,324

&lt;151&gt; 2002-11-18

&lt;160&gt; 149

&lt;170&gt; PatentIn version 3.1

&lt;210&gt; 1

&lt;211&gt; 15679

&lt;212&gt; DNA

&lt;213&gt; Heliothis virescens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (251)..(15676)

&lt;223&gt;

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (5515)

&lt;223&gt; n = c or g

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (13000)

&lt;223&gt; n = a or t

&lt;400&gt; 1

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Thr Gly Glu Arg Val Cys Leu Ala Ala Glu Gly Leu Gly Asn Arg His
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Cys Phe Leu Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser
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Tyr	Gly	Gln	Asp	Val	Asn	Thr	Leu	Lys	Tyr	Phe	Thr	Thr	Cys	Gly	
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Leu	Gln	Glu	Gly	Tyr	Glu	Pro	Phe	Cys	Val	Asn	Met	Lys	Arg	Asp	
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Val	Thr	His	Trp	Tyr	Thr	Lys	Asp	Gln	Pro	Ile	Phe	Glu	Asn	Thr	
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Asp	Glu	Met	Ile	Asp	Thr	Arg	Ile	Asp	Val	Thr	Arg	Ile	Pro	Ala	
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Gly	Ser	Asp	Thr	Pro	Pro	Cys	Leu	Lys	Ile	Ser	His	Asn	Thr	Phe	
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Glu	Thr	Met	Glu	Lys	Ala	Asn	Trp	Glu	Phe	Leu	Arg	Leu	Ser	Leu	
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Pro	Val	Ile	Cys	His	Asn	Glu	Phe	Ile	Asp	Glu	Ala	Glu	Lys	Ala	
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Arg	Arg	Trp	Val	Glu	Ile	Lys	Asp	Arg	Gln	Arg	Ile	Leu	Met	Lys	
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Glu	Ala	Val	Glu	Ala	Gln	Met	Ser	Ala	His	Ile	Asp	Gln	Ile	Met	
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Arg	Ser	Gly	Phe	Thr	Met	Asn	Asp	Ile	Lys	Gly	Leu	His	Tyr	Glu	
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Asp	Asn	Gln	Glu	Glu	Leu	Pro	Ser	Ser	Lys	Met	Lys	Arg	Leu	Pro	
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Ser	Arg	Pro	Pro	Arg	Lys	Gly	Ser	Met	Thr	Arg	Gly	Val	Thr	Ile	
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Gln	Asn	Tyr	Asn	Asn	Leu	Gln	Pro	Gly	Gln	Val	Asn	Gly	Met	His	
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Arg	Ser	Thr	Ser	Glu	Ala	Glu	Met	Ala	Lys	Tyr	Asp	Leu	Gly	Ala	
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Gln	Gly	Leu	Thr	Pro	Asp	Asp	Lys	Lys	Asp	Lys	Arg	Gly	Arg	Ser	
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Pro	Phe	Lys	Phe	Phe	Arg	Ser	Lys	Arg	Gly	Glu	Ser	Ser	Asp	Arg	
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gct	aaa	tcc	cgt	aaa	tcc	aaa	aca	cca	gac	ccc	ttc	agt	gat	acc	4660
Ala	Lys	Ser	Arg	Lys	Ser	Lys	Thr	Pro	Asp	Pro	Phe	Ser	Asp	Thr	
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Glu	Val	Ser	Pro	Glu	Arg	Gly	Ala	Arg	Arg	Pro	Asn	Pro	Gln	Ile	
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Lys	Val	Ser	Gln	Ala	Asn	Gln	Arg	Tyr	Asn	Gly	Met	Asn	Ala	Arg	
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Pro	Ser	Arg	Thr	Asn	Leu	Tyr	Gly	Ser	Gln	Val	Gly	Leu	Asn	Ser	
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Asn	Ala	Gln	Met	Ala	Thr	Pro	Thr	Gln	Asp	Arg	Lys	Gln	Met	Thr	
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acc	agc	act	ctc	gcg	cag	tcg	gct	acg	gaa	act	gtc	ggc	aat	gag	4885
Thr	Ser	Thr	Leu	Ala	Gln	Ser	Ala	Thr	Glu	Thr	Val	Gly	Asn	Glu	
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Ile	Phe	Asp	Ala	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu	Tyr	Phe	Tyr	
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Gly	Val	Arg	Ile	Tyr	Pro	Gly	Gln	Asp	Pro	Thr	His	Met	Tyr	Ile	
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Gln	Ser	Lys	Val	Thr	Lys	Ser	Ser	Val	Ile	Ile	Thr	Asp	Asp	Tyr	
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Asp	Arg	Val	Val	Glu	Asn	Val	Asn	Arg	Gln	Ser	Cys	Tyr	Met	Val	
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Arg	Ala	Asp	Glu	Leu	Tyr	Asn	Glu	Val	Met	Ala	Glu	Ala	Thr	Ala	
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Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Ile	Gly	Cys	Ser	Val	Asp	Thr	
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Ser	Thr	Gly	Ser	Val	Ser	Phe	Thr	Cys	Glu	Gly	Lys	Asp	Thr	Ser	
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Phe	Lys	Phe	Lys	Met	Glu	Pro	Glu	Thr	Lys	Leu	Phe	Pro	Ala	Ile	
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Ser	Val	Glu	Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile	Glu	Leu	Gly	
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aga	tca	gcc	acc	agt	ctg	cca	cta	tca	gcc	gct	gta	cta	cct	acg	5380
Arg	Ser	Ala	Thr	Ser	Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Pro	Thr	
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Ser	Asp	Lys	His	Val	Ile	Pro	Gln	Phe	Pro	Pro	Arg	Leu	Lys	Val	
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Gln	Cys	Leu	Lys	Pro	His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Gln	Ser	
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Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Gly	Ile	Arg	Gly	Trp	Xaa	
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Met	Leu	Cys	Glu	Asp	Ala	Val	Ser	Met	Leu	Ala	Leu	His	Ile	Pro	
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Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu	Leu	Ile	Glu	Met	Asp	
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Lys	Leu	Leu	Ser	Phe	His	Ser	His	Thr	Leu	Thr	Leu	Tyr	Ala	Ala	
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tta	tgt	tac	cag	agt	aac	tac	agg	gcg	gcc	cac	gct	ctg	tgc	tcg	5695
Leu	Cys	Tyr	Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Ala	Leu	Cys	Ser	
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His	Ala	Asp	Gln	Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Gln	Ser	Gln	Tyr	
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Met	Ser	Gly	Pro	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Thr	Ala	
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Leu	His	Leu	Glu	Ser	His	Ala	Thr	Thr	Met	Glu	Ala	Cys	Lys	Asn	
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Glu	Phe	Val	Ile	Pro	Leu	Gly	Pro	Glu	Leu	Lys	Ala	Leu	Tyr	Glu	
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Glu	Pro	Asp	Met	Gly	His	Ser	Leu	Arg	Ser	Leu	Gln	Thr	Glu	Ser	
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Val	Arg	Pro	Gln	Met	Lys	Met	Thr	Asp	Ile	Ala	Glu	Ser	Ile	Thr	
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Glu	Ile	Ser	Asn	Leu	Tyr	Ser	Pro	Tyr	Phe	Pro	Leu	Glu	Val	Val	
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cgc	gag	ttc	gtg	atg	cag	gcg	ctg	gct	gaa	gcc	gtg	gag	acc	aac	6055

Arg	Glu	Phe	Val	Met	Gln	Ala	Leu	Ala	Glu	Ala	Val	Glu	Thr	Asn	
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cag	gtg	cac	aac	tgg	gat	cct	gtc	ggg	ggg	agc	aat	gag	aac	ctg	6100
Gln	Val	His	Asn	Trp	Asp	Pro	Val	Gly	Gly	Ser	Asn	Glu	Asn	Leu	
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ttc	ctg	cct	cta	ata	aag	ttg	gtg	gac	cgt	ctc	ctg	ctg	gtc	ggc	6145
Phe	Leu	Pro	Leu	Ile	Lys	Leu	Val	Asp	Arg	Leu	Leu	Leu	Val	Gly	
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atg	atg	cgc	gac	gaa	gat	gtg	gag	aag	cta	ctc	atc	atg	acc	aac	6190
Met	Met	Arg	Asp	Glu	Asp	Val	Glu	Lys	Leu	Leu	Ile	Met	Thr	Asn	
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cct	gag	aca	tgg	gac	ccc	tcg	ttt	gac	aaa	gag	ggg	aaa	gac	gag	6235
Pro	Glu	Thr	Trp	Asp	Pro	Ser	Phe	Asp	Lys	Glu	Gly	Lys	Asp	Glu	
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cac	cgc	aaa	ggg	cta	ctc	cac	atg	aaa	atg	gcg	gaa	ggc	gct	aag	6280
His	Arg	Lys	Gly	Leu	Leu	His	Met	Lys	Met	Ala	Glu	Gly	Ala	Lys	
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ctg	cag	atg	tgt	tac	tta	ctg	caa	cat	ctc	aac	gac	ata	cag	ctg	6325
Leu	Gln	Met	Cys	Tyr	Leu	Leu	Gln	His	Leu	Asn	Asp	Ile	Gln	Leu	
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Arg	His	Arg	Val	Glu	Ala	Thr	Ile	Ala	Phe	Ala	His	Asp	Phe	Val	
				2030					2035					2040	
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Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Thr	Glu	Ile	Lys	
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Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Arg	Glu	
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Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Val	Ile	Leu	Ser	Phe	
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aag	cac	cta	gag	gaa	gaa	gac	aag	gag	aac	tgt	ccg	tgc	ggc	gag	6550
Lys	His	Leu	Glu	Glu	Glu	Asp	Lys	Glu	Asn	Cys	Pro	Cys	Gly	Glu	
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Glu	Leu	Ile	Ala	Arg	Met	Asn	Glu	Phe	His	Asp	Thr	Leu	Met	Ala	
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cac	gtg	tcg	ctg	cac	gcg	ctg	cag	gag	cct	gat	gct	gcg	gaa	aat	6640
His	Val	Ser	Leu	His	Ala	Leu	Gln	Glu	Pro	Asp	Ala	Ala	Glu	Asn	
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caa	gaa	cct	gaa	gca	aaa	ccg	ggg	gca	ttc	ggc	aag	cta	tac	aac	6685
Gln	Glu	Pro	Glu	Ala	Lys	Pro	Gly	Ala	Phe	Gly	Lys	Leu	Tyr	Asn	
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att	atc	aat	acg	gtc	aag	gaa	tta	gaa	gag	gaa	gct	aag	gca	ata	6730
Ile	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Glu	Ala	Lys	Ala	Ile	
				2150					2155					2160	
gaa	gag	cct	ccg	aag	aag	acg	cct	gag	gag	aag	ttc	cgt	aag	gtc	6775
Glu	Glu	Pro	Pro	Lys	Lys	Thr	Pro	Glu	Glu	Lys	Phe	Arg	Lys	Val	
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ctc	atc	cag	acc	ata	gtg	aac	tgg	gct	gag	gag	tcg	cag	ata	gaa	6820
Leu	Ile	Gln	Thr	Ile	Val	Asn	Trp	Ala	Glu	Glu	Ser	Gln	Ile	Glu	
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aca	ccc	aag	ctt	gtc	aga	gaa	atg	ttc	agt	ctt	cta	gtc	cgc	cag	6865
Thr	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Val	Arg	Gln	
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Tyr	Asp	Ala	Val	Gly	Glu	Leu	Ile	Arg	Ala	Leu	Glu	Lys	Thr	Tyr	
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gtc	atc	aac	gcg	aag	acc	aag	tta	gat	gtc	gcc	gag	atg	tgg	gtg	6955

Val	Ile	Asn	Ala	Lys	Thr	Lys	Leu	Asp	Val	Ala	Glu	Met	Trp	Val	
2225									2230					2235	
ggg	ctc	agc	cag	atc	cga	gcc	ctg	ctg	cct	gtg	cag	atg	agc	cag	7000
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2240									2245					2250	
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Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val	Asn	
2255									2260					2265	
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Asn	His	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Val	Leu	Arg	
2270									2275					2280	
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Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Leu	Gly	Arg	
2285									2290					2295	
cgc	gcg	cag	gcg	cag	tcc	gac	gcg	cag	ccc	tcc	tca	cag	cct	gtc	7180
Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Gln	Pro	Ser	Ser	Gln	Pro	Val	
2300									2305					2310	
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Ala	Glu	Asp	Asn	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu	Met	Val	Val	
2315									2320					2325	
gct	tgc	tgc	cgt	ttc	ctc	tgc	tac	ttc	tgc	cgt	acc	ggg	aga	cag	7270
Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Gly	Arg	Gln	
2330									2335					2340	
aac	cag	aag	gcc	atg	ttc	gac	cac	ttc	gac	ttc	ctc	ctg	gag	aac	7315
Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu	Leu	Glu	Asn	
2345									2350					2355	
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Ser	Asn	Ile	Leu	Leu	Ser	Arg	Pro	Ser	Leu	Arg	Gly	Ser	Thr	Pro	
2360									2365					2370	
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2375									2380					2385	
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2390									2395					2400	
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2405									2410					2415	
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2420									2425					2430	
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His	Pro	Leu	Pro	Glu	Ser	Asp	Glu	Asp	Glu	Asp	Tyr	Ile	Asp	Thr	
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Lys	Lys	Lys	Lys	His	Arg	Asp	Lys	Lys	Arg	Asp	Lys	Asp	Lys	Glu	
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Val	Gln	Ala	Ser	Leu	Met	Val	Ala	Cys	Leu	Lys	Arg	Leu	Leu	Pro	
				3635					3640					3645	
gtt	ggc	ctt	aac	cta	ttc	gct	ggc	aga	gaa	caa	gaa	ctg	gtg	cag	11230
Val	Gly	Leu	Asn	Leu	Phe	Ala	Gly	Arg	Glu	Gln	Glu	Leu	Val	Gln	
				3650					3655					3660	
cat	tgt	aaa	gac	agg	ttc	ctg	aag	gta	ggg	acc	ctc	aag	aaa	atg	11275
His	Cys	Lys	Asp	Arg	Phe	Leu	Lys	Val	Gly	Thr	Leu	Lys	Lys	Met	
				3665					3670					3675	
tca	gaa	caa	gat	gtg	gca	gaa	ttc	gcg	aag	acc	cag	ctg	aca	ctt	11320
Ser	Glu	Gln	Asp	Val	Ala	Glu	Phe	Ala	Lys	Thr	Gln	Leu	Thr	Leu	
				3680					3685					3690	
cca	gat	aaa	ata	gat	ccg	gca	gac	gaa	atg	tct	tgg	caa	cat	tac	11365
Pro	Asp	Lys	Ile	Asp	Pro	Ala	Asp	Glu	Met	Ser	Trp	Gln	His	Tyr	
				3695					3700					3705	
ttg	tat	agc	aag	tta	ggc	tcg	aag	agt	aag	agc	aat	ata	act	gtg	11410
Leu	Tyr	Ser	Lys	Leu	Gly	Ser	Lys	Ser	Lys	Ser	Asn	Ile	Thr	Val	
				3710					3715					3720	
gaa	act	gct	gaa	aat	aaa	gcc	aag	att	att	gat	gat	act	gtt	gaa	11455

Glu Thr Ala Glu Asn	Lys Ala Lys Ile Ile	Asp Asp Thr Val Glu	
3725	3730	3735	
agg atc gtc gct atg	agt aaa gtg ctt ttc	gga ttg cat atg atc	11500
Arg Ile Val Ala Met	Ser Lys Val Leu Phe	Gly Leu His Met Ile	
3740	3745	3750	
gac cat ccc caa caa	atg agt aag aac gtg	tac cgg tcg gtg gtg	11545
Asp His Pro Gln Gln	Met Ser Lys Asn Val	Tyr Arg Ser Val Val	
3755	3760	3765	
tcc ata caa cgc aag	cgc gcc gtc atc gcc	tgc ttc cga caa act	11590
Ser Ile Gln Arg Lys	Arg Ala Val Ile Ala	Cys Phe Arg Gln Thr	
3770	3775	3780	
tca cta cat tct ctg	ccg aga cat cga gcg	tgt aac atc ttc gct	11635
Ser Leu His Ser Leu	Pro Arg His Arg Ala	Cys Asn Ile Phe Ala	
3785	3790	3795	
cgc acg tac tac gag	ctc tgg ttg gaa gag	gag aac att aga caa	11680
Arg Thr Tyr Tyr Glu	Leu Trp Leu Glu Glu	Glu Asn Ile Arg Gln	
3800	3805	3810	
gaa gta atg ata gaa	gat ctt act caa tca	ttc gaa gac gca gag	11725
Glu Val Met Ile Glu	Asp Leu Thr Gln Ser	Phe Glu Asp Ala Glu	
3815	3820	3825	
ctg aag aag agt gag	gtg gtg gag gaa ggt	gag aag cct gag ccc	11770
Leu Lys Lys Ser Asp	Val Val Glu Glu Gly	Glu Lys Pro Asp Pro	
3830	3835	3840	
ctc acg cag ctg gtc	acc acc tcc tgt cgc	ggt gcc atg act gag	11815
Leu Thr Gln Leu Val	Thr Thr Ser Cys Arg	Gly Ala Met Thr Glu	
3845	3850	3855	
agg tcc ggc gct ttg	cag gag gat cct cta	tac atg tct tac gca	11860
Arg Ser Gly Ala Leu	Gln Glu Asp Pro Leu	Tyr Met Ser Tyr Ala	
3860	3865	3870	
cac atc ata gcg aag	tcc tgt gga gaa gaa	gag gaa gaa ggg ggt	11905
His Ile Ile Ala Lys	Ser Cys Gly Glu Glu	Glu Glu Glu Gly Gly	
3875	3880	3885	
ggg gag gaa gag gaa	ggg ggt gga gaa gca	gag gct gaa gac gaa	11950
Gly Glu Glu Glu Glu	Gly Gly Gly Glu Ala	Glu Ala Glu Asp Glu	
3890	3895	3900	
ggc aga gcc agt ata	cac gaa caa gaa atg	gag aaa caa aag ctc	11995
Gly Arg Ala Ser Ile	His Glu Gln Glu Met	Glu Lys Gln Lys Leu	
3905	3910	3915	
cta ttc cac caa gcg	cgg ccg gcg gac cgt	ggg gtt gcc gaa atg	12040
Leu Phe His Gln Ala	Arg Pro Ala Asp Arg	Gly Val Ala Glu Met	
3920	3925	3930	
gtg ttg ctg cac atc	tcc gcg tcc aaa ggc	ctg ccc agc gag atg	12085
Val Leu Leu His Ile	Ser Ala Ser Lys Gly	Leu Pro Ser Glu Met	
3935	3940	3945	
gtc atg aag act tta	cag ctc ggt att agt	ata ctg agg ggc ggc	12130
Val Met Lys Thr Leu	Gln Leu Gly Ile Ser	Ile Leu Arg Gly Gly	
3950	3955	3960	
aat att gat ata cag	atg ggt atg ttg aac	cac ttg aaa gac aag	12175
Asn Ile Asp Ile Gln	Met Gly Met Leu Asn	His Leu Lys Asp Lys	
3965	3970	3975	
aaa gac gtg ggc ttc	ttt acg tcc atc gcc	ggc ctc atg aac tcc	12220
Lys Asp Val Gly Phe	Phe Thr Ser Ile Ala	Gly Leu Met Asn Ser	
3980	3985	3990	
tgc tcc gtg ctc gat	ctt gac gcc ttc gag	agg aac acc aag gct	12265
Cys Ser Val Leu Asp	Leu Asp Ala Phe Glu	Arg Asn Thr Lys Ala	
3995	4000	4005	
gaa ggt ctg ggc gtg	ggg ctg gaa ggt gcg	gcg gga gag aag aac	12310
Glu Gly Leu Gly Val	Gly Leu Glu Gly Ala	Ala Gly Glu Lys Asn	
4010	4015	4020	
atg cat gac gcc gag	ttc acc tgc gca ctc	ttc agg ttc att cag	12355

Met	His	Asp	Ala	Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	
				4025					4030					4035	
ctc	acc	tgt	gaa	gga	cac	aac	ttg	gac	tgg	cag	aac	tac	ctg	cga	12400
Leu	Thr	Cys	Glu	Gly	His	Asn	Leu	Asp	Trp	Gln	Asn	Tyr	Leu	Arg	
				4040					4045					4050	
act	cag	gcc	ggg	aac	acg	aca	aca	gtg	aac	gtg	gtc	atc	tgc	acc	12445
Thr	Gln	Ala	Gly	Asn	Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	
				4055					4060					4065	
gtc	gac	tac	ctg	ctg	cgg	ctg	cag	gag	tcc	atc	atg	gac	ttc	tac	12490
Val	Asp	Tyr	Leu	Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	
				4070					4075					4080	
tgg	cac	tac	tca	agc	aag	gaa	ctg	atc	gac	ccg	gct	ggc	aaa	gcg	12535
Trp	His	Tyr	Ser	Ser	Lys	Glu	Leu	Ile	Asp	Pro	Ala	Gly	Lys	Ala	
				4085					4090					4095	
aac	ttc	ttc	aag	gcc	att	ggc	gtg	gct	tcc	caa	gta	ttc	aac	acc	12580
Asn	Phe	Phe	Lys	Ala	Ile	Gly	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	
				4100					4105					4110	
ctc	act	gaa	gtc	ata	cag	gga	cct	tgt	acg	cag	aat	cag	cag	gct	12625
Leu	Thr	Glu	Val	Ile	Gln	Gly	Pro	Cys	Thr	Gln	Asn	Gln	Gln	Ala	
				4115					4120					4125	
ttg	gct	cac	tcc	agg	ttg	tgg	gac	gct	gtc	ggg	ggg	ttc	ctg	ttc	12670
Leu	Ala	His	Ser	Arg	Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	
				4130					4135					4140	
cta	ttc	tcc	cac	atg	cag	gac	aag	ttg	tcg	aag	cac	tcg	tcg	cag	12715
Leu	Phe	Ser	His	Met	Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	
				4145					4150					4155	
gtg	gac	ctg	ctg	aag	gaa	ctc	ctc	aat	ccg	cag	aag	gac	atg	atc	12760
Val	Asp	Leu	Leu	Lys	Glu	Leu	Leu	Asn	Pro	Gln	Lys	Asp	Met	Ile	
				4160					4165					4170	
acc	atg	atg	ctg	tcc	atg	ctt	gaa	gga	aat	gtt	gtt	aat	ggg	aca	12805
Thr	Met	Met	Leu	Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	
				4175					4180					4185	
atc	gtc	aag	caa	atg	gtg	gac	aca	cta	gta	gga	tcg	gcc	tcc	aac	12850
Ile	Val	Lys	Gln	Met	Val	Asp	Thr	Leu	Val	Gly	Ser	Ala	Ser	Asn	
				4190					4195					4200	
gtg	gaa	ctg	atc	ctg	aaa	tac	ttc	gac	atg	ttc	ctc	aag	ctg	aag	12895
Val	Glu	Leu	Ile	Leu	Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Lys	
				4205					4210					4215	
gac	ctg	acc	tcc	agc	gcc	agc	ttc	cag	gag	att	gat	gcc	aat	aac	12940
Asp	Leu	Thr	Ser	Ser	Ala	Ser	Phe	Gln	Glu	Ile	Asp	Ala	Asn	Asn	
				4220					4225					4230	
gac	ggc	tgg	gtg	ctg	ccc	aag	gac	ttc	aag	gag	aaa	atg	gaa	caa	12985
Asp	Gly	Trp	Val	Leu	Pro	Lys	Asp	Phe	Lys	Glu	Lys	Met	Glu	Gln	
				4235					4240					4245	
cag	aag	agt	tat	acn	ccc	gaa	gaa	atc	gag	ttc	ctc	cta	gct	tgc	13030
Gln	Lys	Ser	Tyr	Xaa	Pro	Glu	Glu	Ile	Glu	Phe	Leu	Leu	Ala	Cys	
				4250					4255					4260	
tgc	gag	acg	aac	cac	gac	ggc	aag	tta	gac	tac	atc	ggg	ttc	tgc	13075
Cys	Glu	Thr	Asn	His	Asp	Gly	Lys	Leu	Asp	Tyr	Ile	Gly	Phe	Cys	
				4265					4270					4275	
gac	cgt	ttc	cac	gag	cct	gcc	aag	gag	atc	ggg	ttt	aac	ttg	gcc	13120
Asp	Arg	Phe	His	Glu	Pro	Ala	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	
				4280					4285					4290	
gtg	tta	ctg	act	aac	ttg	tct	gaa	cat	atg	ccg	aac	gag	cct	aga	13165
Val	Leu	Leu	Thr	Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	
				4295					4300					4305	
ttg	gca	cgt	ttt	ctg	gag	acg	gca	ggg	tca	gtc	ctg	gac	tac	ttc	13210
Leu	Ala	Arg	Phe	Leu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Asp	Tyr	Phe	
				4310					4315					4320	
gaa	cca	ttc	ctg	ggc	cgt	atc	gag	atc	atg	ggc	ggc	tcc	aag	cgc	13255

Glu	Pro	Phe	Leu	Gly	Arg	Ile	Glu	Ile	Met	Gly	Gly	Ser	Lys	Arg	
				4325					4330					4335	
atc	gag	cgt	gtc	tac	ttc	gag	atc	aag	gag	tct	aat	ata	gaa	cag	13300
Ile	Glu	Arg	Val	Tyr	Phe	Glu	Ile	Lys	Glu	Ser	Asn	Ile	Glu	Gln	
				4340					4345					4350	
tgg	gag	aaa	ccg	caa	att	aag	gaa	tcc	aaa	cgc	gcg	ttc	ttc	tac	13345
Trp	Glu	Lys	Pro	Gln	Ile	Lys	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	
				4355					4360					4365	
agc	ata	gta	aca	gaa	ggg	ggg	gat	aga	gaa	aaa	ttg	gag	gct	ttc	13390
Ser	Ile	Val	Thr	Glu	Gly	Gly	Asp	Arg	Glu	Lys	Leu	Glu	Ala	Phe	
				4370					4375					4380	
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Val	Asn	Phe	Cys	Glu	Asp	Ala	Ile	Phe	Glu	Met	Thr	His	Ala	Ser	
				4385					4390					4395	
gga	ctg	atg	gcc	gcg	tcc	gaa	gag	tcg	gtg	gga	ggg	acc	aag	aat	13480
Gly	Leu	Met	Ala	Ala	Ser	Glu	Glu	Ser	Val	Gly	Gly	Thr	Lys	Asn	
				4400					4405					4410	
aga	gag	gcc	agc	tat	atg	tat	atg	ggg	gat	gat	ggg	gat	gag	aga	13525
Arg	Glu	Ala	Ser	Tyr	Met	Tyr	Met	Gly	Asp	Asp	Gly	Asp	Glu	Arg	
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gcc	ggc	aaa	gat	cca	ttc	cgt	cgc	gga	ctc	cag	tca	gtc	aaa	gac	13570
Ala	Gly	Lys	Asp	Pro	Phe	Arg	Arg	Gly	Leu	Gln	Ser	Val	Lys	Asp	
				4430					4435					4440	
ggc	gtc	gcc	acg	gca	ttt	tca	tcc	tta	tct	cct	tcc	aac	ata	aag	13615
Gly	Val	Ala	Thr	Ala	Phe	Ser	Ser	Leu	Ser	Pro	Ser	Asn	Ile	Lys	
				4445					4450					4455	
gcg	aaa	atc	gca	gac	atg	cag	caa	atg	cca	cca	gcc	gaa	cta	gct	13660
Ala	Lys	Ile	Ala	Asp	Met	Gln	Gln	Met	Pro	Pro	Ala	Glu	Leu	Ala	
				4460					4465					4470	
gtg	ggc	ttc	ttc	aaa	atg	ttc	ttc	tat	cca	ttc	tat	tac	ttg	ggc	13705
Val	Gly	Phe	Phe	Lys	Met	Phe	Phe	Tyr	Pro	Phe	Tyr	Tyr	Leu	Gly	
				4475					4480					4485	
tat	gga	gtt	ctc	gtc	gtt	gtc	agg	tat	ata	ttc	ggg	gtg	ctc	ttg	13750
Tyr	Gly	Val	Leu	Val	Val	Val	Arg	Tyr	Ile	Phe	Gly	Val	Leu	Leu	
				4490					4495					4500	
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Gly	Leu	Met	Arg	Gly	Pro	Gln	Thr	Asp	Glu	Pro	Pro	Pro	Glu	Pro	
				4505					4510					4515	
acg	gaa	gag	gag	aaa	atc	ggg	cag	ttg	aga	cac	agg	ttg	cta	gcg	13840
Thr	Glu	Glu	Glu	Lys	Ile	Gly	Gln	Leu	Arg	His	Arg	Leu	Leu	Ala	
				4520					4525					4530	
aca	caa	agt	tct	cga	cat	ctc	ccg	gcg	ttg	cct	cca	gct	gat	gat	13885
Thr	Gln	Ser	Ser	Arg	His	Leu	Pro	Ala	Leu	Pro	Pro	Ala	Asp	Asp	
				4535					4540					4545	
acg	gga	cag	atg	caa	gtg	tcg	gca	ttc	gga	ctc	gat	atc	acc	aaa	13930
Thr	Gly	Gln	Met	Gln	Val	Ser	Ala	Phe	Gly	Leu	Asp	Ile	Thr	Lys	
				4550					4555					4560	
gaa	gac	aat	gga	cag	ata	caa	gta	aaa	cct	cac	gaa	tca	ccc	agc	13975
Glu	Asp	Asn	Gly	Gln	Ile	Gln	Val	Lys	Pro	His	Glu	Ser	Pro	Ser	
				4565					4570					4575	
aca	tcc	act	cca	tca	tca	ggc	ggg	gag	gcg	gag	gtg	tca	ccc	gac	14020
Thr	Ser	Thr	Pro	Ser	Ser	Gly	Gly	Glu	Ala	Glu	Val	Ser	Pro	Asp	
				4580					4585					4590	
gag	agc	gcc	gac	cac	acg	gag	gag	cag	aga	ccg	cct	tct	ctt	atc	14065
Glu	Ser	Ala	Asp	His	Thr	Glu	Glu	Gln	Arg	Pro	Pro	Ser	Leu	Ile	
				4595					4600					4605	
gac	ctg	ctt	ggg	ggg	gaa	caa	gct	aaa	aag	caa	gct	cag	gag	agg	14110
Asp	Leu	Leu	Gly	Gly	Glu	Gln	Ala	Lys	Lys	Gln	Ala	Gln	Glu	Arg	
				4610					4615					4620	
atg	gaa	gct	caa	gct	gct	caa	caa	gct	gcc	atg	tcg	gcc	att	gaa	14155

Met	Glu	Ala	Gln	Ala	Ala	Gln	Gln	Ala	Ala	Met	Ser	Ala	Ile	Glu	
				4625					4630					4635	
gct	gaa	agc	aaa	aag	gca	gtg	caa	ggg	ccc	gca	cca	tca	gcg	cta	14200
Ala	Glu	Ser	Lys	Lys	Ala	Val	Gln	Gly	Pro	Ala	Pro	Ser	Ala	Leu	
				4640					4645					4650	
tct	caa	gtg	gac	ctg	tcc	cag	tac	acc	cgg	cgc	gca	gtc	tcg	ttc	14245
Ser	Gln	Val	Asp	Leu	Ser	Gln	Tyr	Thr	Arg	Arg	Ala	Val	Ser	Phe	
				4655					4660					4665	
cta	gct	cgc	aac	ttc	tac	aac	ctg	aag	tac	gtg	gcg	ctc	gtg	ctg	14290
Leu	Ala	Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu	Val	Leu	
				4670					4675					4680	
gcc	ttc	tgt	atc	aac	ttc	gtg	ctg	ctc	ttc	tat	aag	gta	tct	acc	14335
Ala	Phe	Cys	Ile	Asn	Phe	Val	Leu	Leu	Phe	Tyr	Lys	Val	Ser	Thr	
				4685					4690					4695	
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Leu	Asp	Gly	Glu	Gly	Gly	Glu	Gly	Ser	Gly	Leu	Gly	Asp	Ile	Ile	
				4700					4705					4710	
gcc	ggg	ggg	ggg	tcc	gga	tcc	ggg	gct	ggc	tct	ggc	agt	gga	gac	14425
Ala	Gly	Gly	Gly	Ser	Gly	Ser	Gly	Ala	Gly	Ser	Gly	Ser	Gly	Asp	
				4715					4720					4725	
ggg	agc	ggc	gag	aca	ggg	gaa	gat	gac	gac	gcg	tta	gaa	gta	gta	14470
Gly	Ser	Gly	Glu	Thr	Gly	Glu	Asp	Asp	Asp	Ala	Leu	Glu	Val	Val	
				4730					4735					4740	
cac	ata	gac	gaa	gac	ttc	ttc	tat	atg	gaa	cac	gtc	atc	aag	atg	14515
His	Ile	Asp	Glu	Asp	Phe	Phe	Tyr	Met	Glu	His	Val	Ile	Lys	Met	
				4745					4750					4755	
gcg	gcc	gtg	ctg	cac	tct	atc	gtg	tct	ctg	gct	ata	ctc	att	gga	14560
Ala	Ala	Val	Leu	His	Ser	Ile	Val	Ser	Leu	Ala	Ile	Leu	Ile	Gly	
				4760					4765					4770	
tat	tat	cat	ctt	aag	gtg	ccg	cta	gcc	atc	ttc	aaa	cgt	gag	aag	14605
Tyr	Tyr	His	Leu	Lys	Val	Pro	Leu	Ala	Ile	Phe	Lys	Arg	Glu	Lys	
				4775					4780					4785	
gag	atc	gct	cgt	aag	ctg	gaa	ttc	gac	ggg	ctg	tac	atc	gct	gaa	14650
Glu	Ile	Ala	Arg	Lys	Leu	Glu	Phe	Asp	Gly	Leu	Tyr	Ile	Ala	Glu	
				4790					4795					4800	
cag	cct	gaa	gac	gac	gac	ctc	aag	agc	cac	tgg	gac	aag	ctc	ggt	14695
Gln	Pro	Glu	Asp	Asp	Asp	Leu	Lys	Ser	His	Trp	Asp	Lys	Leu	Val	
				4805					4810					4815	
ata	tct	gcc	aaa	tca	ttc	ccc	gta	aac	tac	tgg	gac	aag	ttt	gtg	14740
Ile	Ser	Ala	Lys	Ser	Phe	Pro	Val	Asn	Tyr	Trp	Asp	Lys	Phe	Val	
				4820					4825					4830	
aag	aag	aag	ggt	cgc	gcc	aaa	tac	tcg	gag	aca	tat	gac	ttc	gac	14785
Lys	Lys	Lys	Val	Arg	Ala	Lys	Tyr	Ser	Glu	Thr	Tyr	Asp	Phe	Asp	
				4835					4840					4845	
tcc	atc	tcc	aac	atg	ttg	ggc	atg	gag	aag	act	tcc	ttc	tcc	gcg	14830
Ser	Ile	Ser	Asn	Met	Leu	Gly	Met	Glu	Lys	Thr	Ser	Phe	Ser	Ala	
				4850					4855					4860	
caa	gaa	gaa	gaa	ggc	agc	aaa	gga	ctt	att	cat	tac	ata	atc	aac	14875
Gln	Glu	Glu	Glu	Gly	Ser	Lys	Gly	Leu	Ile	His	Tyr	Ile	Ile	Asn	
				4865					4870					4875	
ata	gac	tgg	cgc	tac	caa	gtg	tgg	aag	gcc	ggc	gtg	acg	atc	aca	14920
Ile	Asp	Trp	Arg	Tyr	Gln	Val	Trp	Lys	Ala	Gly	Val	Thr	Ile	Thr	
				4880					4885					4890	
gac	aac	tcg	ttc	ctc	tac	tcg	cta	tgg	tac	ttc	tcc	ttc	tcc	gtg	14965
Asp	Asn	Ser	Phe	Leu	Tyr	Ser	Leu	Trp	Tyr	Phe	Ser	Phe	Ser	Val	
				4895					4900					4905	
atg	ggg	aac	ttc	aac	aac	ttc	ttc	ttc	gcg	gca	cac	ttg	ttg	gac	15010
Met	Gly	Asn	Phe	Asn	Asn	Phe	Phe	Phe	Ala	Ala	His	Leu	Leu	Asp	
				4910					4915					4920	
gtg	gct	ggt	ggg	ttt	aag	acc	ctg	agg	act	atc	ttg	cag	tct	gtc	15055

Val	Ala	Val	Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile	Leu	Gln	Ser	Val	
				4925					4930					4935	
acg	cat	aat	gga	aaa	cag	ctg	gta	tta	acg	gtg	atg	ctg	ctg	act	15100
Thr	His	Asn	Gly	Lys	Gln	Leu	Val	Leu	Thr	Val	Met	Leu	Leu	Thr	
				4940					4945					4950	
ata	atc	gtg	tac	atc	tac	acg	gtg	atc	gcg	ttc	aac	ttc	ttc	cgc	15145
Ile	Ile	Val	Tyr	Ile	Tyr	Thr	Val	Ile	Ala	Phe	Asn	Phe	Phe	Arg	
				4955					4960					4965	
aag	ttc	tac	gtg	cag	ggg	gag	gac	gac	gaa	gtc	aat	agg	aac	tgc	15190
Lys	Phe	Tyr	Val	Gln	Gly	Glu	Asp	Asp	Glu	Val	Asn	Arg	Asn	Cys	
				4970					4975					4980	
cat	gac	atg	ttg	acg	tgc	ttc	gtg	ttc	aac	ttg	tac	aag	ggg	gtg	15235
His	Asp	Met	Leu	Thr	Cys	Phe	Val	Phe	Asn	Leu	Tyr	Lys	Gly	Val	
				4985					4990					4995	
cgg	gag	ggc	ggc	ggc	atc	ggc	gac	gag	ctg	gag	ccg	cct	gat	gga	15280
Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp	Glu	Leu	Glu	Pro	Pro	Asp	Gly	
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gac	gac	tcc	gag	gtc	tac	cgc	atc	atc	ttc	gac	atc	tcc	ttc	ttc	15325
Asp	Asp	Ser	Glu	Val	Tyr	Arg	Ile	Ile	Phe	Asp	Ile	Ser	Phe	Phe	
				5015					5020					5025	
ttc	ttc	atc	atc	gtt	atc	ctg	ctc	gct	atc	ctg	cag	ggg	ttg	atc	15370
Phe	Phe	Ile	Ile	Val	Ile	Leu	Leu	Ala	Ile	Leu	Gln	Gly	Leu	Ile	
				5030					5035					5040	
atc	gac	gag	ttc	gga	gag	ctg	cgt	gac	cag	ttg	gag	tcg	gtc	aag	15415
Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg	Asp	Gln	Leu	Glu	Ser	Val	Lys	
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gag	gac	atg	gag	tcc	aac	tgc	ttc	atc	tgc	ggc	atc	aat	aaa	gac	15460
Glu	Asp	Met	Glu	Ser	Asn	Cys	Phe	Ile	Cys	Gly	Ile	Asn	Lys	Asp	
				5060					5065					5070	
tat	ttt	gat	aaa	gtg	ccg	cac	ggg	ttc	gac	aca	cac	gtg	caa	agg	15505
Tyr	Phe	Asp	Lys	Val	Pro	His	Gly	Phe	Asp	Thr	His	Val	Gln	Arg	
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gaa	cac	aat	tta	gct	aat	tac	atg	ttc	ttc	ctc	atg	cat	ctc	att	15550
Glu	His	Asn	Leu	Ala	Asn	Tyr	Met	Phe	Phe	Leu	Met	His	Leu	Ile	
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aat	aaa	ccc	gat	acg	gag	tat	aca	ggg	caa	gaa	acc	tac	gta	tgg	15595
Asn	Lys	Pro	Asp	Thr	Glu	Tyr	Thr	Gly	Gln	Glu	Thr	Tyr	Val	Trp	
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aac	atg	tac	aca	caa	aga	tgt	tgg	gac	ttt	ttc	ccc	gtg	gga	gat	15640
Asn	Met	Tyr	Thr	Gln	Arg	Cys	Trp	Asp	Phe	Phe	Pro	Val	Gly	Asp	
				5120					5125					5130	
tgt	ttc	cga	aag	caa	tac	gaa	gac	ctc	atg	gga	gaa	tag			15679
Cys	Phe	Arg	Lys	Gln	Tyr	Glu	Asp	Leu	Met	Gly	Glu				
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 <223> Xaa = Thr



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Arg Val Cys Leu Ala Ala Glu Gly Leu Gly Asn Arg His Cys Phe Leu  
35 40 45  
Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val  
50 55 60  
Phe Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val  
65 70 75 80  
Thr Ala Ala Gly Ser Glu Thr Gly Lys Glu Asn Leu Gly Lys Gly Thr  
85 90 95  
Gly Ser Gly Tyr Arg Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg  
100 105 110  
His Leu Asn Ser Asp Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser  
115 120 125  
Gln Asp Lys Leu Ala Phe Asp Val Gly Leu Gln Gln His Ser Gln Gly  
130 135 140  
Glu Ala Cys Trp Trp Thr Leu His Pro Ala Ser Lys Gln Arg Ser Glu  
145 150 155 160  
Gly Glu Lys Val Arg Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala  
165 170 175  
Ile Glu Arg Tyr Leu His Thr Thr Lys Glu Asn Glu Val Ser Ile Val  
180 185 190  
Asn Ala Ser Phe His Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr  
195 200 205  
Gly Ile Ser Arg Met Lys Tyr Val Gly Tyr Val Phe Gly Gly Asp Val  
210 215 220  
Leu Arg Phe Phe His Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr  
225 230 235 240  
Trp Thr Lys Asp Gly Gly Gln Asn Ile Val Val Tyr Lys Gly Gly Ser  
245 250 255  
Val Met Ser Gln Ala Arg Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr  
260 265 270  
Lys Trp Ala Gly Gly Phe Ile Asn Trp Tyr His Pro Met Arg Ile Arg  
275 280 285  
His Ile Thr Thr Gly Arg Tyr Leu Gly Val Asn Asp Gln Asn Glu Leu  
290 295 300  
Tyr Leu Val Ser Arg Glu Glu Pro Thr Thr Ala Ser Cys Ala Phe Cys  
305 310 315 320  
Leu Arg Gln Glu Lys Asp Asp Gln Lys Gln Val Leu Glu Asp Lys Asp  
325 330 335  
Leu Glu Val Ile Gly Ala Pro Ile Ile Lys Tyr Gly Asp Ser Thr Val  
340 345 350  
Ile Val Gln His Ser Glu Thr Gly Leu Trp Leu Ser Tyr Lys Ser Tyr  
355 360 365  
Glu Thr Lys Lys Lys Gly Val Gly Lys Val Glu Glu Lys Gln Ala Ile  
370 375 380  
Leu His Glu Glu Gly Lys Met Asp Asp Gly Leu Asp Leu Ser Arg Ser  
385 390 395 400  
Gln Glu Glu Glu Ser Met Thr Ala Arg Val Ile Arg Lys Cys Ser Ser  
405 410 415  
Leu Phe Thr Lys Phe Ile Asn Gly Leu Glu Thr Leu Gln Glu Asn Arg  
420 425 430  
Arg His Ser Met Phe Phe Ala Ser Val Asn Leu Gly Glu Met Val Met  
435 440 445  
Cys Leu Glu Asp Leu Thr Asn Tyr Phe Ala Gln Pro Asp Glu Asp Met  
450 455 460  
Glu His Glu Glu Lys Gln Asn Lys Phe Arg Ala Leu Arg Asn Arg Gln

465					470				475				480
Asp	Leu	Phe	Gln	Glu	Glu	Gly	Ile	Leu	Asn	Leu	Ile	Leu	Glu
				485					490				495
Asp	Lys	Ile	Asn	Val	Val	Thr	Ser	Gln	Gly	Phe	Leu	Ala	Gly
			500					505				510	
Ala	Gly	Asp	Glu	Ser	Gly	Gln	Ser	Trp	Glu	Met	Ile	Ser	Gly
		515					520				525		
Tyr	Gln	Leu	Leu	Ala	Ala	Ile	Ile	Lys	Gly	Asn	His	Thr	Asn
	530					535				540			
Gln	Phe	Ala	Asn	Ser	Asn	Arg	Phe	Asn	Trp	Leu	Phe	Ser	Arg
545					550				555				560
Ser	Gln	Ala	Ser	Gly	Glu	Gly	Thr	Gly	Met	Leu	Asp	Val	Leu
			565					570					575
Ile	Leu	Ile	Asp	Ser	Pro	Glu	Ala	Leu	Asn	Met	Met	Arg	Asp
			580					585				590	
Ile	Lys	Val	Ile	Ile	Ser	Leu	Leu	Glu	Lys	His	Gly	Arg	Asp
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Val	Leu	Asp	Val	Leu	Cys	Ser	Leu	Cys	Val	Gly	Asn	Gly	Val
	610					615				620			
Arg	Ser	Ser	Gln	Asn	Asn	Ile	Cys	Asp	Tyr	Leu	Leu	Pro	Gly
625					630				635				640
Leu	Leu	Leu	Gln	Thr	Ala	Leu	Val	Asp	His	Val	Ser	Ser	Val
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Asn	Ile	Phe	Val	Gly	Arg	Val	Glu	Gly	Ser	Ala	Val	Tyr	Arg
		660					665					670	
Tyr	Phe	Glu	Val	Thr	Met	Asp	His	Ile	Glu	Lys	Thr	Thr	His
	675					680					685		Met
Pro	His	Leu	Arg	Ile	Gly	Trp	Ala	Asn	Thr	Thr	Gly	Tyr	Val
	690				695					700			Pro
Pro	Gly	Gly	Gly	Glu	Lys	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp
705					710				715				Asp
Tyr	Ser	Tyr	Gly	Phe	Asp	Gly	Ala	Tyr	Leu	Trp	Ser	Gly	Gly
			725					730					Arg
													735
Thr	Pro	Val	Asn	Arg	Thr	His	Ala	Glu	Glu	Pro	Tyr	Ile	Arg
			740					745					Lys
Asp	Val	Ile	Gly	Cys	Ala	Leu	Asp	Leu	Thr	Val	Pro	Ile	Ile
	755						760					765	Asn
Met	Phe	Asn	Gly	Val	Arg	Val	Thr	Gly	Ser	Phe	Thr	Asn	Phe
	770					775					780		Asn
Glu	Gly	Met	Phe	Phe	Pro	Val	Ile	Ser	Cys	Ser	Ser	Lys	Leu
785					790				795				Ser
Arg	Phe	Leu	Leu	Gly	Gly	Glu	His	Gly	Arg	Leu	Arg	Tyr	Ala
			805						810				Ala
Glu	Gly	Tyr	Ser	Pro	Leu	Val	Glu	Ser	Leu	Leu	Pro	Gln	Gln
			820					825					Ile
Ser	Leu	Glu	Pro	Cys	Phe	Tyr	Phe	Gly	Asn	Leu	Ser	Lys	Arg
	835						840					845	Ala
Ala	Gly	Pro	Pro	Leu	Val	Gln	Asp	Asp	Thr	Ala	Phe	Val	Pro
	850					855				860			Thr
Val	Asp	Thr	Leu	Gln	Ile	Thr	Leu	Pro	Thr	Tyr	Val	Glu	Gln
865					870				875				Ile
Asp	Lys	Leu	Ala	Glu	Asn	Ile	His	Glu	Met	Trp	Ala	Met	Asn
			885						890				Lys
Glu	Ala	Gly	Trp	Met	Tyr	Gly	Asp	Gln	Arg	Glu	Asp	Leu	His
			900					905					Lys
His	Pro	Cys	Leu	Val	Pro	Phe	Glu	Arg	Leu	Pro	Pro	Ala	Glu
	915						920					925	Lys
Tyr	Asp	Ile	Gln	Leu	Ala	Val	Gln	Thr	Leu	Lys	Thr	Ile	Leu
	930					935					940		Ala
Gly	Tyr	Tyr	Ile	Ser	Leu	Asp	Lys	Pro	Pro	Ala	Arg	Ile	Arg
													Asn
													Val

945	950										955				960			
Arg	Leu	Pro	Asn	Glu	Pro	Phe	Met	Gln	Ser	Asn	Gly	Tyr	Lys	Pro	Ala			
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Pro	Leu	Asp	Leu	Ser	Ala	Val	Thr	Leu	Thr	Pro	Lys	Met	Asp	Glu	Leu			
			980					985					990					
Val	Gly	Gln	Leu	Ala	Glu	Asn	Thr	His	Asn	Leu	Trp	Ala	Arg	Glu	Arg			
		995					1000					1005						
Ile	Gln	Gln	Gly	Trp	Thr	Tyr	Gly	Leu	Asn	Glu	Asp	Ser	Asp	Met				
	1010					1015					1020							
His	Arg	Ser	Pro	His	Leu	Val	Pro	Tyr	Pro	Lys	Val	Asp	Asp	Ala				
	1025					1030					1035							
Ile	Lys	Lys	Ala	Asn	Arg	Asp	Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr				
	1040					1045					1050							
Leu	Leu	Val	Tyr	Gly	Tyr	Met	Leu	Asp	Pro	Pro	Thr	Gly	Glu	Gln				
	1055					1060					1065							
His	Glu	Ala	Leu	Leu	Leu	Glu	Ala	Ser	Lys	Gln	Lys	Gln	Ala	Asp				
	1070					1075					1080							
Phe	Arg	Thr	Tyr	Arg	Ala	Glu	Lys	Asn	Tyr	Ala	Val	Ser	Ser	Gly				
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Lys	Trp	Tyr	Phe	Glu	Phe	Glu	Ile	Leu	Thr	Ala	Gly	Pro	Met	Arg				
	1100					1105					1110							
Val	Gly	Trp	Ala	His	Ala	Asp	Met	Ala	Pro	Gly	Met	Met	Leu	Gly				
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Gln	Asp	Glu	Asn	Ser	Trp	Ala	Phe	Asp	Gly	Tyr	Asn	Glu	Glu	Lys				
	1130					1135					1140							
Val	Tyr	Ser	Gly	Asn	Thr	Glu	Ser	Phe	Gly	Lys	Gln	Trp	Ala	Val				
	1145					1150					1155							
Gly	Asp	Val	Val	Gly	Val	Phe	Leu	Asp	Leu	Ile	Asp	Lys	Thr	Ile				
	1160					1165					1170							
Ser	Phe	Ser	Leu	Asn	Gly	Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly				
	1175					1180					1185							
Glu	Thr	Thr	Phe	Ala	Asp	Val	Gln	Gly	Asp	Asn	Phe	Val	Pro	Ala				
	1190					1195					1200							
Cys	Thr	Leu	Gly	Val	Gly	Gln	Lys	Ala	Arg	Leu	Thr	Tyr	Gly	Gln				
	1205					1210					1215							
Asp	Val	Asn	Thr	Leu	Lys	Tyr	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu				
	1220					1225					1230							
Gly	Tyr	Glu	Pro	Phe	Cys	Val	Asn	Met	Lys	Arg	Asp	Val	Thr	His				
	1235					1240					1245							
Trp	Tyr	Thr	Lys	Asp	Gln	Pro	Ile	Phe	Glu	Asn	Thr	Asp	Glu	Met				
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Ile	Asp	Thr	Arg	Ile	Asp	Val	Thr	Arg	Ile	Pro	Ala	Gly	Ser					

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Ser Glu Ala Glu Met Ala	Lys Tyr Asp Leu Gly	Ala Gln Gly Leu
1415	1420	1425
Thr Pro Asp Asp Lys Lys	Asp Lys Arg Gly Arg	Ser Pro Phe Lys
1430	1435	1440
Phe Phe Arg Ser Lys Arg	Gly Glu Ser Ser Asp	Arg Ala Lys Ser
1445	1450	1455
Arg Lys Ser Lys Thr Pro	Asp Pro Phe Ser Asp	Thr Glu Val Ser
1460	1465	1470
Pro Glu Arg Gly Ala Arg	Arg Pro Asn Pro Gln	Ile Lys Val Ser
1475	1480	1485
Gln Ala Asn Gln Arg Tyr	Asn Gly Met Asn Ala	Arg Pro Ser Arg
1490	1495	1500
Thr Asn Leu Tyr Gly Ser	Gln Val Gly Leu Asn	Ser Asn Ala Gln
1505	1510	1515
Met Ala Thr Pro Thr Gln	Asp Arg Lys Gln Met	Thr Thr Ser Thr
1520	1525	1530
Leu Ala Gln Ser Ala Thr	Glu Thr Val Gly Asn	Glu Ile Phe Asp
1535	1540	1545
Ala Glu Cys Leu Lys Leu	Ile Asn Glu Tyr Phe	Tyr Gly Val Arg
1550	1555	1560
Ile Tyr Pro Gly Gln Asp	Pro Thr His Met Tyr	Ile Gly Trp Val
1565	1570	1575
Thr Thr Gln Tyr His Leu	His Ser Lys Asp Phe	Asn Gln Ser Lys
1580	1585	1590
Val Thr Lys Ser Ser Val	Ile Ile Thr Asp Asp	Tyr Asp Arg Val
1595	1600	1605
Val Glu Asn Val Asn Arg	Gln Ser Cys Tyr Met	Val Arg Ala Asp
1610	1615	1620
Glu Leu Tyr Asn Glu Val	Met Ala Glu Ala Thr	Ala Lys Gly Ala
1625	1630	1635
Ser Gln Gly Met Phe Ile	Gly Cys Ser Val Asp	Thr Ser Thr Gly
1640	1645	1650
Ser Val Ser Phe Thr Cys	Glu Gly Lys Asp Thr	Ser Phe Lys Phe
1655	1660	1665
Lys Met Glu Pro Glu Thr	Lys Leu Phe Pro Ala	Ile Ser Val Glu
1670	1675	1680
Ala Thr Ser Lys Glu Ile	Leu Gln Ile Glu Leu	Gly Arg Ser Ala
1685	1690	1695
Thr Ser Leu Pro Leu Ser	Ala Ala Val Leu Pro	Thr Ser Asp Lys
1700	1705	1710
His Val Ile Pro Gln Phe	Pro Pro Arg Leu Lys	Val Gln Cys Leu
1715	1720	1725
Lys Pro His Gln Trp Ala	Arg Val Pro Asn Gln	Ser Leu Gln Val
1730	1735	1740
His Ala Leu Lys Leu Ser	Gly Ile Arg Gly Trp	Xaa Met Leu Cys
1745	1750	1755
Glu Asp Ala Val Ser Met	Leu Ala Leu His Ile	Pro Glu Glu Asp
1760	1765	1770
Arg Cys Ile Asp Ile Leu	Glu Leu Ile Glu Met	Asp Lys Leu Leu
1775	1780	1785
Ser Phe His Ser His Thr	Leu Thr Leu Tyr Ala	Ala Leu Cys Tyr
1790	1795	1800
Gln Ser Asn Tyr Arg Ala	Ala His Ala Leu Cys	Ser His Ala Asp
1805	1810	1815
Gln Lys Gln Leu Leu Tyr	Ala Ile Gln Ser Gln	Tyr Met Ser Gly
1820	1825	1830
Pro Leu Arg Gln Gly Phe	Tyr Asp Leu Leu Thr	Ala Leu His Leu
1835	1840	1845
Glu Ser His Ala Thr Thr	Met Glu Ala Cys Lys	Asn Glu Phe Val

1850	Ile Pro Leu Gly Pro Glu	1855	Leu Lys Ala Leu Tyr	1860	Glu Pro Asp
1865	Met Gly His Ser Leu Arg	1870	Ser Leu Gln Thr Glu	1875	Ser Val Arg Pro
1880	Gln Met Lys Met Thr Asp	1885	Ile Ala Glu Ser Ile	1890	Thr Glu Ile Ser
1895	Asn Leu Tyr Ser Pro Tyr	1900	Phe Pro Leu Glu Val	1905	Val Arg Glu Phe
1910	Val Met Gln Ala Leu Ala	1915	Glu Ala Val Glu Thr	1920	Asn Gln Val His
1925	Asn Trp Asp Pro Val Gly	1930	Gly Ser Asn Glu Asn	1935	Leu Phe Leu Pro
1940	Leu Ile Lys Leu Val Asp	1945	Arg Leu Leu Leu Val	1950	Gly Met Met Arg
1955	Asp Glu Asp Val Glu Lys	1960	Leu Leu Ile Met Thr	1965	Asn Pro Glu Thr
1970	Trp Asp Pro Ser Phe Asp	1975	Lys Glu Gly Lys Asp	1980	Glu His Arg Lys
1985	Gly Leu Leu His Met Lys	1990	Met Ala Glu Gly Ala	1995	Lys Leu Gln Met
2000	Cys Tyr Leu Leu Gln His	2005	Leu Asn Asp Ile Gln	2010	Leu Arg His Arg
2015	Val Glu Ala Thr Ile Ala	2020	Phe Ala His Asp Phe	2025	Val Gly Asp Leu
2030	Gln Thr Asp Gln Leu Arg	2035	Arg Tyr Thr Glu Ile	2040	Lys Gln Ser Asp
2045	Leu Pro Ser Ala Val Ala	2050	Ala Lys Lys Thr Arg	2055	Glu Phe Arg Cys
2060	Pro Pro Arg Glu Gln Met	2065	Asn Val Ile Leu Ser	2070	Phe Lys His Leu
2075	Glu Glu Glu Asp Lys Glu	2080	Asn Cys Pro Cys Gly	2085	Glu Glu Leu Ile
2090	Ala Arg Met Asn Glu Phe	2095	His Asp Thr Leu Met	2100	Ala His Val Ser
2105	Leu His Ala Leu Gln Glu	2110	Pro Asp Ala Ala Glu	2115	Asn Gln Glu Pro
2120	Glu Ala Lys Pro Gly Ala	2125	Phe Gly Lys Leu Tyr	2130	Asn Ile Ile Asn
2135	Thr Val Lys Glu Leu Glu	2140	Glu Glu Ala Lys Ala	2145	Ile Glu Glu Pro
2150	Pro Lys Lys Thr Pro Glu	2155	Glu Lys Phe Arg Lys	2160	Val Leu Ile Gln
2165	Thr Ile Val Asn Trp Ala	2170	Glu Glu Ser Gln Ile	2175	Glu Thr Pro Lys
2180	Leu Val Arg Glu Met Phe	2185	Ser Leu Leu Val Arg	2190	Gln Tyr Asp Ala
2195	Val Gly Glu Leu Ile Arg	2200	Ala Leu Glu Lys Thr	2205	Tyr Val Ile Asn
2210	Ala Lys Thr Lys Leu Asp	2215	Val Ala Glu Met Trp	2220	Val Gly Leu Ser
2225	Gln Ile Arg Ala Leu Leu	2230	Pro Val Gln Met Ser	2235	Gln Glu Glu Glu
2240	Glu Leu Met Arg Lys Arg	2245	Leu Trp Lys Leu Val	2250	Asn Asn His Thr
2255	Phe Phe Gln His Pro Asp	2260	Leu Ile Arg Val Leu	2265	Arg Val His Glu
2270	Asn Val Met Ala Val Met	2275	Met Asn Thr Leu Gly	2280	Arg Arg Ala Gln
2285	Ala Gln Ser Asp Ala Gln	2290	Pro Ser Ser Gln Pro	2295	Val Ala Glu Asp

2300	Asn Lys Glu Lys Asp Thr	2305	Ser His Glu Met Val	2310	Val Ala Cys Cys
2315	Arg Phe Leu Cys Tyr Phe	2320	Cys Arg Thr Gly Arg	2325	Gln Asn Gln Lys
2330	Ala Met Phe Asp His Phe	2335	Asp Phe Leu Leu Glu	2340	Asn Ser Asn Ile
2345	Leu Leu Ser Arg Pro Ser	2350	Leu Arg Gly Ser Thr	2355	Pro Leu Asp Val
2360	Ala Tyr Ser Ser Leu Met	2365	Glu Asn Thr Glu Leu	2370	Ala Leu Ala Leu
2375	Arg Glu His Tyr Leu Glu	2380	Lys Ile Ala Val Tyr	2385	Leu Ser Arg Cys
2390	Gly Leu Gln Ser Asn Ser	2395	Glu Leu Val Glu Lys	2400	Gly Tyr Pro Asp
2405	Leu Gly Trp Asp Pro Val	2410	Glu Gly Glu Arg Tyr	2415	Leu Asp Phe Leu
2420	Arg Phe Cys Val Trp Val	2425	Asn Gly Glu Ser Val	2430	Glu Glu Asn Ala
2435	Asn Leu Val Ile Arg Leu	2440	Leu Ile Arg Arg Pro	2445	Glu Cys Leu Gly
2450	Pro Ala Leu Arg Gly Glu	2455	Gly Glu Gly Leu Leu	2460	Lys Ala Ile Val
2465	Asp Ala Asn Lys Met Ser	2470	Glu Arg Ile Ala Asp	2475	Arg Arg Lys Leu
2480	Arg Glu Met Glu Gln Glu	2485	Gly Asp Val Asn Phe	2490	Ser His Pro Leu
2495	Pro Glu Ser Asp Glu Asp	2500	Glu Asp Tyr Ile Asp	2505	Thr Gly Ala Ala
2510	Ile Leu Asn Phe Tyr Cys	2515	Thr Leu Val Asp Leu	2520	Leu Gly Arg Cys
2525	Ala Pro Asp Ala Gly Val	2530	Ile Ala Leu Gly Lys	2535	Asn Glu Ser Leu
2540	Arg Ala Arg Ala Ile Leu	2545	Arg Ser Leu Val Pro	2550	Leu Glu Asp Leu
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2570	Gly Glu Glu Arg Pro Lys	2575	Ser Asp Met Pro Ser	2580	Gly Leu Ile Pro
2585	Gly His Lys Gln Ser Val	2590	Gly Leu Phe Leu Gly	2595	Arg Val Tyr Gly
2600	Ile Glu Thr Gln Glu Leu	2605	Phe Tyr Lys Leu Leu	2610	Glu Glu Ala Phe
2615	Leu Pro Asp Leu Arg Ala	2620	Ala Thr Met Leu Asp	2625	Arg Asn Asp Gly
2630	Cys Glu Ser Asp Met Ala	2635	Leu Ser Met Asn Arg	2640	Tyr Ile Gly Asn
2645	Ser Ile Leu Pro Leu Leu	2650	Ile Lys His Ala Tyr	2655	Phe Tyr Asn Glu
2660	Ala Glu Asn Tyr Ala Ser	2665	Leu Leu Asp Ala Thr	2670	Leu His Thr Val
2675	Tyr Arg Leu Ser Lys Asn	2680	Arg Met Leu Thr Lys	2685	Gly Gln Arg Glu
2690	Ala Val Ser Asp Phe Leu	2695	Val Ala Leu Thr Ser	2700	Ala Met Gln Pro
2705	Ser Met Leu Leu Lys Leu	2710	Leu Arg Lys Leu Thr	2715	Val Asp Val Ser
2720	Lys Leu Ser Glu Tyr Thr	2725	Thr Val Ala Leu Arg	2730	Leu Leu Thr Leu
2735	His Tyr Glu Arg Cys Ala	2740	Lys Tyr Tyr Gly Ser	2745	Thr Gly Ala Gly

2750	Gln Gly Ala Phe Gly Ala Ser	2755	Ser Asp Glu Glu Lys	2760	Arg Leu Thr
2765	Met Met Leu Phe Ser Ser Ile	2770	Phe Asp Ser Leu Ser	2775	Lys Met Asp
2780	Tyr Glu Pro Glu Leu Phe Gly	2785	Lys Ala Leu Pro Cys	2790	Leu Ile Ala
2795	Ile Gly Cys Ala Leu Pro Pro	2800	Asp Tyr Thr Leu Ser	2805	Lys Asn Tyr
2810	Asp Asp Glu Phe Tyr Gly Lys	2815	Glu Gln Ala Ala Gly	2820	Asp Leu Asp
2825	Asn Pro Gln Tyr Asp Pro Gln	2830	Pro Ile Asn Thr Ser	2835	Ser Val Ala
2840	Leu Asn Asn Asp Leu Asn Thr	2845	Ile Val Gln Lys Phe	2850	Ser Glu His
2855	Tyr His Asp Ala Trp Ala Ser	2860	Arg Lys Ile Glu Asn	2865	Gly Trp Val
2870	Tyr Gly Glu Gly Trp Ser Asp	2875	Ser Gln Lys Thr His	2880	Pro Arg Leu
2885	Lys Pro Tyr Asn Met Leu Asn	2890	Asp Tyr Glu Lys Glu	2895	Arg Tyr Lys
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2930	Ser Met Gly Arg Gln Ser Lys	2935	Ser Gly Gly Arg Pro	2940	Pro Glu Ile
2945	Val Thr Asp Ser Ala Thr Pro	2950	Phe Asn Tyr Asn Pro	2955	His Pro Val
2960	Asp Met Thr Asn Leu Thr Leu	2965	Ser Arg Glu Met Gln	2970	Asn Met Ala
2975	Glu Arg Leu Ala Asp Asn Ala	2980	His Asp Ile Trp Ala	2985	Lys Lys Lys
2990	Lys Glu Glu Leu Val Thr Asn	2995	Gly Gly Gly Ile His	3000	Pro Gln Leu
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3065	Leu Glu Lys Leu Ile Gln Tyr	3070	Ile Asp Arg Ala Thr	3075	Ile Asn Met
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3110	Pro Leu Met Glu Lys Tyr Phe	3115	Ser Thr His Arg Asn	3120	Tyr Phe Ile
3125	Ala Val Ala Thr Ala Thr Asn	3130	Ser Val Gly Ala Ala	3135	Ser Leu Lys
3140	Glu Lys Glu Met Val Ala Ala	3145	Leu Phe Cys Lys Leu	3150	Ala Ser Leu
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3170	Val Arg Cys Leu Gln Val Leu	3175	Val Arg Gly Ile Asp	3180	Ala Lys Ser
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Met Glu Gln Cys Met Pro Thr Leu Glu Thr Ile Leu Gly Glu Val		
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3875	Glu Glu Gly Gly Gly Glu	3880	Ala Glu Ala Glu Asp	3885	Glu Gly Arg Ala
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4070	Ser Ser Lys Glu Leu Ile	4075	Asp Pro Ala Gly Lys	4080	Ala Asn Phe Phe
4085	Lys Ala Ile Gly Val Ala	4090	Ser Gln Val Phe Asn	4095	Thr Leu Thr Glu

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 <213> Myzus persicae

<400> 4  
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 Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu Arg  
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 Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Tyr Leu Glu  
 35 40 45  
 Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val Phe  
 50 55 60  
 Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65 70 75 80  
 Ala Ala Ser Ser Gln Glu Gly Lys Gly Gly Thr Gly Ser Gly His Arg  
 85 90 95  
 Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His Gln Asn Ser Asp  
 100 105 110  
 Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser  
 115 120 125  
 Phe Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp  
 130 135 140  
 Thr Val His Pro Ala Ser Asn Gln Arg Ser Glu Gly Glu Lys Val Pro  
 145 150 155 160  
 Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu  
 165 170 175  
 His Thr Ala Lys Glu Asn Glu Leu Ser Val Val Asn Ala Ser Phe His  
 180 185 190  
 Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met  
 195 200 205  
 Lys Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His  
 210 215 220  
 Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser Ser Trp Ser Asn Val Ser  
 225 230 235 240  
 Gly Gln Asn Ile Val Ile Tyr Glu Gly Gly Ser Val Met Ser Gln Ala  
 245 250 255  
 Arg Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Ala Gly Gly

260										265					270				
Phe	Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg	His	Leu	Thr	Thr	Gly				
		275						280				285							
Arg	Tyr	Leu	Gly	Val	Asn	Glu	Asn	Asn	Glu	Leu	His	Leu	Val	Cys	Arg				
	290					295					300								
Glu	Glu	Ala	Thr	Thr	Ala	Ser	Ser	Thr	Phe	Phe	Leu	Arg	Gln	Glu	Lys				
305					310					315					320				
Asp	Asp	Gln	Lys	Ile	Ile	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Val	Ile	Gly				
			325						330					335					
Ala	Pro	Ile	Ile	Lys	Tyr	Gly	Asp	Ser	Thr	Val	Leu	Val	Gln	His	Ser				
		340						345					350						
Asp	Thr	Gly	Leu	Trp	Leu	Thr	Tyr	Lys	Ser	Tyr	Glu	Thr	Lys	Lys	Lys				
		355					360						365						
Gly	Val	Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Val	Leu	His	Glu	Glu	Gly				
	370					375					380								
Lys	Met	Asp	Asp	Gly	Leu	Asp	Phe	Ser	Arg	Ser	Gln	Glu	Glu	Glu	Ser				
385					390					395					400				
Arg	Thr	Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Gln	Phe				
			405					410						415					
Ile	Ser	Gly	Leu	Glu	Asn	Leu	Gln	Ser	Asn	Arg	Arg	Ser	Ser	Leu	Phe				
		420					425						430						
Cys	Ser	Phe	Val	Asn	Leu	Asn	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu				
		435					440				445								
Ile	Asn	Tyr	Phe	Ala	Gln	Pro	Glu	Glu	Asp	Met	Glu	His	Glu	Glu	Lys				
	450					455					460								
Gln	Asn	Arg	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu				
465					470					475					480				
Glu	Gly	Ile	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Val	Asn	Ile				
			485						490					495					
Ile	Thr	Ser	Gln	Gly	Phe	Met	Val	Ser	Leu	Ala	Gly	Asp	Glu	Ser	Gly				
		500						505					510						
Gln	Ser	Trp	Asp	Val	Ile	Ser	Gly	Tyr	Leu	Tyr	Gln	Leu	Leu	Ala	Ala				
		515					520					525							
Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	Gln	Phe	Ala	Asn	Thr	Asn				
	530					535					540								
Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	Ser	Ser	Glu				
545					550					555					560				
Gly	Thr	Gly	Met	Leu	Asp	Val	Leu	His	Cys	Val	Leu	Ile	Asp	Ser	Pro				
			565						570					575					
Glu	Ala	Leu	Asn	Met	Met	Lys	Asp	Glu	His	Ile	Lys	Val	Ile	Ile	Ser				

37

900					905					910					
Asp	Lys	Leu	Pro	Pro	Ala	Glu	Lys	Arg	Tyr	Asp	Ser	Gln	Leu	Ala	Val
	915						920					925			
Gln	Thr	Leu	Lys	Thr	Val	Ile	Ala	Leu	Gly	Tyr	His	Ile	Ser	Ile	Asp
	930					935					940				
Asn	Pro	Pro	Ser	Arg	Ile	Lys	Thr	Val	Arg	Leu	Pro	Asn	Glu	Pro	Phe
945					950					955					960
Met	Gln	Ser	Asn	Gly	Tyr	Lys	Pro	Ala	Pro	Leu	Asp	Leu	Ser	Ala	Ile
				965					970						975
Ile	Leu	Ser	Gly	Lys	Met	Glu	Glu	Leu	Ile	Asp	Gln	Leu	Ala	Gly	Asn
			980					985						990	
Thr	His	Asn	Leu	Trp	Ala	Lys	Glu	Arg	Ile	Gln	Gln	Gly	Trp	Thr	Tyr
		995					1000						1005		
Gly	Leu	Asn	Glu	Glu	Leu	Gln	Met	Leu	Arg	Ser	Pro	His	Leu	Val	
	1010					1015					1020				
Pro	Tyr	Ser	Lys	Val	Asp	Asp	Ala	Ile	Lys	Lys	Ala	Asn	Arg	Asp	
	1025					1030					1035				
Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr	Leu	Leu	Val	Tyr	Gly	Tyr	Asn	
	1040					1045					1050				
Leu	Asp	Pro	Pro	Thr	Gly	Glu	Thr	Asn	Glu	Ala	Thr	Leu	Leu	Thr	
	1055					1060					1065				
Asp	Asp	Asn	Ser	Asn	Arg	Tyr	Leu	Thr	Phe	Arg	Thr	Tyr	Arg	Ala	
	1070					1075					1080				
Glu	Lys	Thr	Tyr	Ala	Val	Ser	Ser	Gly	Lys	Trp	Tyr	Phe	Glu	Phe	
	1085					1090					1095				
Glu	Ile	Leu	Thr	Ser	Gly	Pro	Met	Arg	Val	Gly	Trp	Ala	Arg	Phe	
	1100					1105					1110				
Thr	Cys	Ser	Pro	Gly	Tyr	Gln	Ile	Gly	Ser	Asp	Glu	Asn	Ser	Trp	
	1115					1120					1125				
Ala	Phe	Asp	Gly	Tyr	Asn	Glu	Glu	Lys	Ile	Tyr	Met	Gly	Thr	Ala	
	1130					1135					1140				
Glu	Ser	Phe	Gly	Arg	Gln	Trp	Gln	Val	Gly	Asp	Val	Val	Gly	Val	
	1145					1150					1155				
Phe	Leu	Asp	Leu	Met	Asp	His	Thr	Ile	Ser	Phe	Ser	Met	Asn	Gly	
	1160					1165					1170				
Glu	Leu	Leu	Met	Asp	Thr	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ser	Glu	
	1175					1180					1185				
Val	Gln	Gly	Glu	Gly	Phe	Val	Pro	Ala	Phe	Thr	Leu	Gly	Leu	Gly	
	1190					1195					1200				
Gln	Lys	Ala	Lys	Leu	Thr	Phe	Gly	Gln	Asp	Val	Asn	Ser	Leu	Lys	

1205	1210	1215
Tyr Phe Thr Thr Cys Gly Leu	Gln Glu Gly Tyr Glu	Pro Phe Cys
1220	1225	1230
Val Asn Met Lys Arg Pro Val	Ala Tyr Trp Tyr Thr	Lys Asp Gln
1235	1240	1245
Pro Ile Phe Glu Asn Thr Asp	Asp Phe Ser Ser Val	Ile Asp Val
1250	1255	1260
Thr Arg Ile Pro Ala Gly Ser	Asp Thr Pro Pro Cys	Leu Lys Ile
1265	1270	1275
Ser His Asn Thr Phe Glu Thr	Met Glu Lys Ala Asn	Trp Glu Phe
1280	1285	1290
Leu Arg Leu Ser Leu Pro Val	Ile Cys Leu Pro Ser	Phe Ile Gly
1295	1300	1305
Asp Gln Glu Lys Gln Arg Gly	Trp Gln Glu Ile Arg	Ile Arg Gln
1310	1315	1320
His Arg Leu Leu Ser Gln Ser	Glu His Ala Thr Pro	Ala His Ile
1325	1330	1335
Glu Arg Ile Met Lys Ser Gly	Phe Ser Met Ser Asp	Ile Lys Gly
1340	1345	1350
Leu His Arg Gly Tyr Ser Asp	Asp Pro Val Glu Asn	Asp Glu Ile
1355	1360	1365
Met Pro Asn Thr Ala Pro Leu	Pro Pro Arg Gly Lys	Asn Gln Pro
1370	1375	1380
Pro Pro Pro Arg Pro Pro Arg	Lys Gly Ser Leu Ser	Arg His Asp
1385	1390	1395
Asp Leu Thr Ile Glu Asn Asp	Gly Lys Leu Asn Arg	Ser Ser Ser
1400	1405	1410
Glu Leu Asn Phe Asn Ile Tyr	Asn His Gln Asn Gly	Asp Gly Gln
1415	1420	1425
Asp Ile Asn Lys Asp Asp Lys	Lys Lys Arg Gly Arg	Ser Pro Phe
1430	1435	1440
Arg Phe Phe Ser Arg Lys Lys	Glu Gly Pro Ser Asp	Asn Pro Lys
1445	1450	1455
Arg Ala Lys Thr Pro Asp Pro	Ala Arg Asn Val Asp	Arg Pro Arg
1460	1465	1470
Asn Ala Ala His Arg Pro Asn	Thr Leu Asn Glu Arg	Val Thr Pro
1475	1480	1485
Gln Ile Arg Val Ser Gln Met	Asp Leu Lys Leu Val	Pro Pro Ala
1490	1495	1500
Ile Pro Asp Arg Pro Gly Gly	Pro Lys Ala Met Ser	Phe Thr Pro

1505		1510		1515
Thr Ser Ala Gly Ile Glu Phe Val Gly Asn Glu Ile Phe Asp Leu				
1520		1525		1530
Glu Cys Leu Lys Leu Ile Asn Glu Tyr Tyr Tyr Gly Val Arg Ile				
1535		1540		1545
Phe Pro Gly Gln Asp Pro Thr His Val Tyr Val Gly Trp Val Thr				
1550		1555		1560
Thr Gln Tyr His Leu His Thr Lys Asp Phe Ser Gln Asn His Val				
1565		1570		1575
Arg Lys Ser Thr Val Thr Ile Val Asp Glu His Asn Gly Ile Leu				
1580		1585		1590
Glu Ser Ile Asp Arg Gln Ser Cys Tyr Met Val Arg Ser Asp Glu				
1595		1600		1605
Leu Tyr Asn Glu Val Thr Asn Asp Ser Ser Gly Lys Ala Ala Ser				
1610		1615		1620
Gln Gly Met Thr Ile Gly Cys Phe Ile Asp Ile Ala Thr Gly Leu				
1625		1630		1635
Met Ser Phe Thr Cys Glu Gly Lys Glu Thr Ser Phe Lys Phe Lys				
1640		1645		1650
Met Glu Pro Asp Ile Lys Leu Phe Pro Ala Ile Phe Val Glu Ala				
1655		1660		1665
Ser Ser Lys Glu Ile Leu Gln Ile Glu Leu Gly Arg Thr Ser Thr				
1670		1675		1680
Thr Leu Pro Leu Ser Ala Ala Val Leu Gln Asn Ser Glu Arg His				
1685		1690		1695
Val Leu Pro Gln Phe Pro Pro Arg Leu Lys Val Gln Cys Leu Arg				
1700		1705		1710
Pro His Gln Trp Ala Arg Val Pro Asn Asp Ser Leu His Ile His				
1715		1720		1725
Thr Leu Lys Leu Ser Asp Ile Arg Gly Trp Ser Ile Leu Cys Glu				
1730		1735		1740
Asp Pro Val Ser Met Ile Ala Leu His Ile Pro Glu Glu Asp Arg				
1745		1750		1755
Cys Ile Asp Ile Leu Glu Leu Ile Glu Met Glu Lys Leu Leu Ser				
1760		1765		1770
Phe His Ala His Thr Leu Thr Leu Tyr Ala Ala Val Cys Tyr Gln				
1775		1780		1785
Ala Asn Tyr Arg Ala Ala His Ile Leu Cys Thr His Val Asn Gln				
1790		1795		1800
Lys Gln Leu Leu Tyr Ala Ile Cys Ser Glu Tyr Met Ser Gly Pro				

1805		1810		1815
Leu Arg Gln Gly Phe Tyr Asp	Leu Leu Ile Ala Leu His Leu Glu			
1820	1825	1830		
Ser His Ala Thr Thr Met Glu	Val Cys Lys Ile Glu Tyr Ile Ile			
1835	1840	1845		
Pro Leu Gly His Glu Leu Thr	Thr Leu Tyr Asp Asp Pro Gln Met			
1850	1855	1860		
Gly His Ser Leu Arg Ser Leu	Gln Thr Glu Ser Val Arg Pro Gln			
1865	1870	1875		
Met Lys Met Thr Glu Ile Ser	Asp Val Ile Asp Asn Val Arg Asn			
1880	1885	1890		
Leu Tyr Ser Pro Tyr Phe Pro	Leu Gln Val Val Arg Glu Tyr Val			
1895	1900	1905		
Met Ala Ala Leu Glu Glu Ala	Val Leu Val Asn Gln Val His Asn			
1910	1915	1920		
Arg Asp Pro Ile Gly Gly Ser	Asn Glu Asn Leu Phe Leu Pro Leu			
1925	1930	1935		
Leu Lys Leu Val Asp Arg Leu	Leu Leu Val Gly Met Leu Arg Asp			
1940	1945	1950		
Glu Asp Val Glu Lys Leu Leu	Ile Met Ile Asn Pro Glu Thr Trp			
1955	1960	1965		
Asp Pro Glu Phe Gln Lys Asp	Gly Pro Asp Glu His Arg Lys Gly			
1970	1975	1980		
Leu Leu His Met Lys Met Ala	Glu Gly Ala Lys Leu Gln Met Cys			
1985	1990	1995		
Tyr Leu Leu His His Leu Cys	Asp Ile Gln Leu Arg His Arg Val			
2000	2005	2010		
Glu Ser Ile Ile Ser Phe Ser	Tyr Gln Phe Val Asn Asp Ile Gln			
2015	2020	2025		
Ile Asp Gln Leu Arg Arg Tyr	Asn Glu Ile Lys Gln Ser Asp Leu			
2030	2035	2040		
Pro Ser Ala Val Ala Ala Lys	Lys Thr Arg Glu Phe Arg Cys Pro			
2045	2050	2055		
Pro Arg Glu Gln Met Asn Ala	Ile Leu Gly Phe Lys Asn Leu Asp			
2060	2065	2070		
Ile Asp Asp Lys Glu Asn Cys	Leu Ile Gly Asp Glu Leu Arg Glu			
2075	2080	2085		
Arg Met Asn Glu Phe Asn Glu	Arg Leu Met Lys Gln Ile Ser Leu			
2090	2095	2100		
Val Ala Leu Gln Glu Ser Glu	Asp Asp Lys Ser Asp Leu Asn Asn			

2105	2110	2115
Leu Asn Lys Glu Gly Lys 2120	Ile Lys Gln Phe Tyr 2125	Asn Phe Ile Asn 2130
Ala Val Lys Asp Glu Ala 2135	Asn Glu Asp Gly Leu 2140	Asn Glu His Glu 2145
Lys Lys Ile Pro Glu Glu 2150	Ile Phe Arg Lys Val 2155	Leu Ile Ser Thr 2160
Ile Val Ser Trp Ala Glu 2165	Glu Thr Gln Ile Glu 2170	Thr Pro Lys Leu 2175
Val Arg Glu Met Phe Ser 2180	Leu Leu Val Arg Gln 2185	Tyr Asp Ser Val 2190
Gly Glu Leu Ile Arg Ala 2195	Leu Glu Lys Thr Tyr 2200	Val Ile Asn Phe 2205
Lys Thr Lys Glu Asp Val 2210	Ala Gln Met Trp Val 2215	Gly Leu Ser Gln 2220
Ile Arg Ser Leu Leu Pro 2225	Val Gln Met Ser Gln 2230	Glu Glu Glu Glu 2235
Leu Met Arg Glu Arg Leu 2240	Trp Lys Leu Val Asn 2245	Asn His Thr Phe 2250
Phe Gln His Pro Asp Leu 2255	Ile Arg Val Leu Arg 2260	Met His Glu Asn 2265
Val Met Ala Val Val Met 2270	Asn Thr Pro Gly Arg 2275	Arg Ala Gln Ala 2280
Gln Ser Gln Pro Gly Gly 2285	Thr Pro Val Thr Gly 2290	Gln Asp Gly Glu 2295
Ile Val Pro Lys Glu Lys 2300	Asp Thr Ser His Glu 2305	Met Val Val Ala 2310
Cys Cys Arg Phe Leu Cys 2315	Tyr Phe Cys Arg Thr 2320	Ser Arg Gln Asn 2325
Gln Lys Ala Met Phe Asp 2330	His Phe Ser Phe Leu 2335	Leu Glu Asn Ser 2340
Asn Ile Leu Leu Ser Arg 2345	Pro Ser Leu Arg Gly 2350	Ser Thr Pro Leu 2355
Asp Val Ala Tyr Ser Ser 2360	Leu Met Glu Asn Thr 2365	Glu Leu Ala Leu 2370
Ala Leu Arg Glu His Tyr 2375	Leu Glu Lys Ile Ala 2380	Ile Tyr Leu Ser 2385
Arg Cys Gly Leu Gln Ser 2390	Asn Ser Glu Leu Ile 2395	Glu Lys Gly Tyr 2400
Pro Asp Leu Gly Trp Asp 2405	Pro Val Glu Gly Glu 2410	Arg Tyr Leu Asp 2415



2405					2410					2415				
Phe	Leu	Arg	Phe	Cys	Val	Trp	Val	Asn	Gly	Glu	Ser	Val	Glu	Glu
2420						2425					2430			
Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg	Arg	Pro	Glu	Cys
2435						2440					2445			
Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly	Leu	Leu	Arg	Ala
2450						2455					2460			
Ile	Ile	Asp	Ala	Asn	Lys	Met	Ser	Glu	Arg	Ile	Thr	Glu	Arg	Arg
2465						2470					2475			
Lys	Phe	Leu	Glu	Glu	Ser	Gly	Asn	Gln	Glu	Asn	Ile	Gln	Leu	Asp
2480						2485					2490			
His	Pro	Leu	Pro	Glu	Ser	Asp	Asp	Asp	Glu	Asp	Tyr	Ile	Asp	Thr
2495						2500					2505			
Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu	Val	Asp	Leu	Leu
2510						2515					2520			
Gly	Arg	Tyr	Ala	Pro	Asp	Ser	Ser	Val	Ile	Ser	Leu	Gly	Lys	Asn
2525						2530					2535			
Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ile	Leu	Arg	Ser	Leu	Val	Pro	Leu
2540						2545					2550			
Glu	Asp	Leu	His	Gly	Val	Leu	Ser	Leu	Arg	Phe	Thr	Leu	Gln	Asn
2555						2560					2565			
Pro	Ala	Ala	Gly	Gln	Asp	Arg	Pro	Lys	Ser	Asp	Met	Pro	Ser	Gly
2570						2575					2580			
Leu	Ile	Pro	Gly	His	Lys	Gln	Ser	Ile	Val	Leu	Phe	Leu	Glu	Arg
2585						2590					2595			
Val	Tyr	Gly	Ile	Glu	Met	Gln	Glu	Leu	Phe	Phe	Thr	Leu	Leu	Glu
2600						2605					2610			
Glu	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Thr	Ala	Thr	Met	Leu	Asp	Arg
2615						2620					2625			
Asn	Asp	Gly	Leu	Glu	Ser	Asp	Met	Ala	Leu	Ala	Met	Asn	Arg	Tyr
2630						2635					2640			
Ile	Gly	Lys	Ser	Val	Leu	Pro	Leu	Leu	Ile	Gly	His	Ser	Lys	Phe
2645						2650					2655			
Tyr	Ser	Glu	Ser	Gly	Asn	Tyr	Ala	Asn	Leu	Leu	Asp	Ala	Thr	Leu
2660						2665					2670			
His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met	Leu	Thr	Lys	Gly
2675						2680					2685			
Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val	Ala	Leu	Thr	Ser	Gln
2690						2695					2700			
Met	Gln	Pro	Ser	Met	Leu	Leu	Lys	Leu	Leu	Arg	Lys	Leu	Thr	Val

2705					2710					2715				
Asp Val	Ser Asn	Leu Ser	Glu Tyr	Thr Thr	Val Ala	Leu Arg	Leu							
2720			2725		2730									
Leu Thr	Leu His	Tyr Asp	Arg Cys	Ala Lys	Tyr Tyr	Gly Ser	Thr							
2735			2740		2745									
Gly Gly	Gln Gly	Ile Tyr	Gly Ala	Ser Ser	Asp Glu	Glu Lys	Arg							
2750			2755		2760									
Leu Thr	Met Met	Leu Phe	Ser Asn	Ile Phe	Asp Ser	Leu Ser	Lys							
2765			2770		2775									
Met Asp	Tyr Asp	Pro Glu	Leu Phe	Gly Lys	Ala Leu	Pro Cys	Leu							
2780			2785		2790									
Ser Ala	Ile Gly	Cys Ala	Leu Pro	Pro Asp	Tyr Ser	Leu Ser	Lys							
2795			2800		2805									
Asn His	Asp Asp	Glu Trp	Tyr Gly	Ser Lys	Gln Asn	Ile Gln	Gly							
2810			2815		2820									
Pro Ser	Asp Gly	Pro Tyr	Asn Pro	Gln Pro	Ile Asn	Thr Asn	Ser							
2825			2830		2835									
Ile Val	Leu Asp	Asn Asp	Leu Asn	Ser Ile	Val His	Lys Phe	Ser							
2840			2845		2850									
Glu His	Tyr His	Asp Ala	Trp Ala	Asn Arg	Lys Leu	Glu Asn	Gly							
2855			2860		2865									
Trp Val	Tyr Gly	Glu Gln	Phe Asn	Asp Val	Asn Lys	Ser His	Pro							
2870			2875		2880									
Arg Leu	Lys Pro	Tyr Met	Met Leu	Ser Glu	Tyr Glu	Lys Glu	Leu							
2885			2890		2895									
Tyr Lys	Glu Pro	Val Arg	Glu Ser	Leu Lys	Ala Leu	Leu Ala	Ile							
2900			2905		2910									
Gly Trp	Ser Ile	Glu His	Ser Glu	Asn Asp	Ala Pro	Leu Asn	Asn							
2915			2920		2925									
Arg Gly	Ser Val	Arg Arg	Gln Ser	Lys Ser	Asn Glu	Asn Val	Thr							
2930			2935		2940									
Pro Phe	Asp Tyr	His Pro	Asn Pro	Ile Asp	Met Thr	Asn Leu	Thr							
2945			2950		2955									
Leu Thr	Arg Glu	Met Gln	Asn Met	Ala Glu	Arg Leu	Ala Glu	Asn							
2960			2965		2970									
Ser His	Asp Ile	Trp Ala	Lys Lys	Lys Lys	Glu Glu	Val Met	Leu							
2975			2980		2985									
Cys Gly	Gly Gly	Ile His	Asn Gln	Leu Val	Pro Tyr	Asp Leu	Leu							
2990			2995		3000									
Thr Asp	Lys Glu	Lys Lys	Lys Asp	Arg Glu	Arg Ser	Gln Glu	Phe							

3005	3010	3015
Leu Lys Tyr Leu Gln Tyr Gln Gly Tyr Lys Leu His Arg Pro Asn 3020 3025 3030		
Arg Asn Gly Gly Pro Ser Glu Ala Glu Gln Leu Ala Ala Ala Ser 3035 3040 3045		
Thr Gly Glu Leu Arg Phe Ser His Ser Leu Leu Glu Lys Leu Ile 3050 3055 3060		
His Tyr Ile Asp Arg Ala Ser Ile Asn Met Lys Leu Leu Lys Pro 3065 3070 3075		
Ser Gly Thr Phe Ser Arg Arg Ser Ser Phe Lys Ile Cys Thr Arg 3080 3085 3090		
Asp Ile Lys Phe Phe Ser Lys Val Val Leu Pro Leu Val Glu Lys 3095 3100 3105		
Tyr Phe Ser Thr His Arg Asn Tyr Phe Ile Thr Val Ala Thr Ala 3110 3115 3120		
Ser Ser Val Leu Gly Ala Ala Ser Leu Lys Glu Lys Glu Met Val 3125 3130 3135		
Ala Ser Leu Phe Cys Lys Leu Ala Asn Leu Leu Arg Ser Lys Leu 3140 3145 3150		
Met Ala Phe Gly Ala Asp Val Arg Ile Thr Val Arg Cys Leu Gln 3155 3160 3165		
Val Leu Val Lys Ala Ile Asp Ala Lys Ser Leu Val Lys Asn Cys 3170 3175 3180		
Pro Glu Phe Ile Arg Thr Ser Met Leu Thr Phe Phe His Asn Ile 3185 3190 3195		
Ala Asp Asp Leu Glu His Thr Ile Gln Asn Leu His Asp Ser Arg 3200 3205 3210		
Tyr Cys Tyr Leu Arg Gly Thr His Leu Lys Thr Ser Thr Ser Leu 3215 3220 3225		
Phe Tyr Val Asn Asp Val Ile Leu Pro Val Leu Ser Ser Leu Phe 3230 3235 3240		
Asp His Leu Ala Ala Tyr Glu Tyr Gly Asn Glu Leu Leu Leu Asn 3245 3250 3255		
Glu Ile Gln Val Ala Ala Tyr Lys Met Leu Ser Ser Leu Tyr Thr 3260 3265 3270		
Leu Gly Thr Asp Thr Ser Leu Thr His Asp Arg Lys Tyr Leu Lys 3275 3280 3285		
Val Gln Leu Glu Arg His Arg Pro Ala Phe Gly Ser Cys Leu Gly 3290 3295 3300		
Ala Phe Ser Ser Thr Phe Pro Val Ala Phe Leu Glu Pro His Leu		

3305	3310	3315
Asn Lys His Asn Gln Tyr Ser Leu Leu Asn Arg Phe Ala Asp Ser		
3320	3325	3330
Ser Leu Glu Ala Gln Asp Ile Met Ser Arg Thr Glu Gly Thr Met		
3335	3340	3345
Pro Thr Leu Glu Thr Val Leu Asn Glu Val Asp Gln Phe Ile Glu		
3350	3355	3360
Ser Glu Lys Thr Tyr Thr Asp Ala Pro His Ile Ile Asp Val Ile		
3365	3370	3375
Leu Pro Leu Leu Cys Ser Tyr Leu Pro Tyr Trp Trp Ala Gln Gly		
3380	3385	3390
Pro Asp Asn Val Ala Leu Thr Thr Gly Asn His Val Thr Met Val		
3395	3400	3405
Thr Ser Glu His Met Asn Cys Leu Leu Lys Asn Val Leu Lys Leu		
3410	3415	3420
Ile Lys Lys Asn Ile Gly Asn Asp Asn Ala Pro Trp Met Thr Gln		
3425	3430	3435
Ile Ala Ala Tyr Thr Gln Gln Ile Ile Ile Asn Ser Ser Glu Glu		
3440	3445	3450
Leu Leu Lys Asp Pro Phe Leu Pro Leu Ala Glu Arg Val Lys Lys		
3455	3460	3465
Arg Thr Glu Thr Leu Tyr His Lys Glu Glu Ser Leu Arg Gly Phe		
3470	3475	3480
Ile Lys Ser Ser Thr Asp Asp Thr Ser Gln Ile Glu Ala Gln Ile		
3485	3490	3495
Gln Glu Asp Trp Gln Leu Val Val Arg Asp Ile Tyr Ala Phe Tyr		
3500	3505	3510
Pro Leu Leu Ile Lys Tyr Val Asp Leu Gln Arg Asn His Trp Leu		
3515	3520	3525
Arg Asn Ser Ile Ser Asn Ala Glu Asp Leu Tyr Asn His Val Ser		
3530	3535	3540
Glu Ile Phe Asn Ile Trp Ser Lys Ser Gln Tyr Phe Leu Arg Glu		
3545	3550	3555
Glu Gln Asn Phe Ile Ser Ala Asn Glu Ile Asp Asn Met Ile Leu		
3560	3565	3570
Ile Met Pro Thr Ala Thr Arg Arg Ser Ala Val Ile Ser Glu Thr		
3575	3580	3585
Ser Leu Gly Gly Ser Thr Gly Lys Lys Lys Lys Lys His Arg Asp		
3590	3595	3600
Lys Lys Arg Asp Lys Glu Lys Glu Ile Gln Ala Ser Leu Met Val		

3605	3610	3615
Ala Cys Leu Lys Arg Leu Leu	Pro Val Gly Leu Asn Leu Phe Ala	
3620	3625	3630
Gly Arg Glu Gln Glu Leu Val	Gln His Cys Lys Asp Arg Phe Leu	
3635	3640	3645
Lys Arg Met Pro Asp Tyr Asp	Val Ile Arg Phe Val Lys Ile Gln	
3650	3655	3660
Leu Thr Leu Pro Asp Lys Leu	Asp Pro Ala Asp Glu Met Ser Trp	
3665	3670	3675
Gln His Tyr Leu Tyr Ser Lys	Leu Gly Ser Lys Lys Gly Thr Pro	
3680	3685	3690
Glu Ile Lys Pro Gln Gln Val	Asp Glu Val Ala Asp Arg Ile Val	
3695	3700	3705
Ala Met Ala Lys Val Leu Tyr	Gly Leu His Met Ile Asp His Pro	
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Gln Leu Gln Ser Lys Ala Ile	Tyr Arg Ser Val Val Ser Thr Gln	
3725	3730	3735
Arg Lys Arg Ala Val Ile Ala	Cys Phe Arg Gln Leu Ser Leu His	
3740	3745	3750
Ala Leu Thr Arg His Arg Ala	Val Asn Ile Phe Val Arg Ser Phe	
3755	3760	3765
Tyr Glu Leu Trp Leu Gln Asp	Glu Asn Ile Gly Gln Glu Val Val	
3770	3775	3780
Ile Glu Asp Leu Thr Gln Ser	Phe Glu Glu Ala Glu Leu Lys Lys	
3785	3790	3795
Arg Asp Lys Glu Glu Glu Glu	Gly Met Ala Asp Pro Leu Asn Gln	
3800	3805	3810
Met Val Thr Thr Phe Cys Arg	Gly Ala Met Thr Glu Arg Ser Gly	
3815	3820	3825
Ala Leu Gln Glu Asp Pro Leu	Tyr Met Ser Tyr Ala Asp Ile Leu	
3830	3835	3840
Ala Lys Ser Cys Gly Glu Glu	Glu Glu Glu Gly Asn Asn Glu Glu	
3845	3850	3855
Glu Gly Ser Thr Gly Asn Gly	Glu Glu Glu Gly Gly Ala Ser Ile	
3860	3865	3870
His Glu Gln Glu Met Glu Lys	Gln Lys Leu Leu Phe His Gln Ala	
3875	3880	3885
Arg Leu Ala Asn Arg Gly Val	Ala Glu Met Val Leu Leu His Ile	
3890	3895	3900
Ser Ala Cys Lys Gly Ile Pro	Ser Glu Met Val Met Lys Thr Leu	

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Gln	Leu	Gly	Ile	Ala	Val	Leu	Arg	Gly	Gly	Asn	Leu	Glu	Ile	Gln
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Met	Gly	Met	Leu	Asn	His	Leu	Lys	Glu	Lys	Lys	Asp	Val	Gly	Phe
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Phe	Thr	Ser	Val	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser	Val	Leu	Asp
3950						3955					3960			
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3965						3970					3975			
Gly	Ser	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	Asp	Ala	Glu
3980						3985					3990			
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Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser	Ser
4040						4045					4050			
Lys	Glu	Leu	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe	Lys	Ala
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4070						4075					4080			
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Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln	Met
4145						4150					4155			
Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	Leu	Ile	Leu
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Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Lys	Asp	Leu	Thr	Ser	Ser
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Thr	Ser	Phe	Thr	Glu	Ile	Asp	Pro	Asn	Asn	Asp	Gly	Trp	Val	His
4190						4195					4200			
Pro	Lys	Asp	Phe	Lys	Glu	Lys	Met	Glu	Gln	Gln	Lys	Ser	Tyr	Thr

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Ala Glu Glu Ile Glu Phe Met	Leu Gln Cys Cys	Glu Ser Asn His
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Asp Gly Lys Ile Asp Tyr Ile	Gly Phe Thr Asp	Gln Phe His Glu
4235	4240	4245
Pro Ser Lys Glu Ile Gly Phe	Asn Leu Ala Val	Leu Leu Thr Asn
4250	4255	4260
Leu Ser Glu His Met Pro Asn	Glu Pro Arg Leu Thr	Arg Phe Leu
4265	4270	4275
Glu Thr Ala Ser Ser Val Leu	Asn Tyr Phe Gln Pro	Phe Leu Gly
4280	4285	4290
Arg Ile Glu Ile Leu Gly Gly	Ser Lys Arg Ile Glu	Arg Val Tyr
4295	4300	4305
Phe Glu Ile Lys Glu Ser Asn	Ile Glu Gln Trp Leu	Lys Pro Gln
4310	4315	4320
Ile Arg Glu Ser Lys Arg Ala	Phe Phe Tyr Ser Ile	Val Thr Glu
4325	4330	4335
Gly Gly Asp Lys Glu Lys Leu	Glu Ala Phe Val Asn	Phe Cys Glu
4340	4345	4350
Asp Ala Ile Phe Glu Met Gln	His Ala Ser Gly Leu	Met Ala Val
4355	4360	4365
Asp Asp Gly Ser Gly Ile Gly	Gly Gly Lys Ser Arg	Lys Thr Ser
4370	4375	4380
Tyr Thr Tyr Leu Ala Asp Asp	Glu Glu Asn Lys Thr	Ala Lys Asp
4385	4390	4395
Pro Ile Arg Arg Gly Ile Gln	Ala Ile Lys Tyr Gly	Phe His Leu
4400	4405	4410
Leu Phe Phe Val Leu Ser Pro	Thr Asn Ile Lys Asn	Lys Ile Asn
4415	4420	4425
Glu Ile Gln Gln Met Ser Val	Ile Glu Leu Ile Thr	Ser Phe Phe
4430	4435	4440
Lys Leu Trp Phe Tyr Leu Ile	Phe Tyr Thr Gly Tyr	Ser Gly Val
4445	4450	4455
Tyr Val Leu Arg Tyr Ile Ser	Arg Ile Leu Met Gln	Leu Met Ser
4460	4465	4470
Gly Thr Gln Ser Glu Glu Thr	Thr Val Glu Val Val	Glu Glu Lys
4475	4480	4485
Ser Gly Ser Phe Arg Met Leu	Pro Ala Leu Pro Ser	Ser Gly Ile
4490	4495	4500
Asp Glu Thr Pro Ser Thr Leu	Thr Asp Ser Asn Asn	Met Arg Lys

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Gly Asp Asp Lys Asp Glu Thr	Ser Ala Glu Asn His	Glu Lys Glu		
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Asp Gly Val Asp Gly Ser Glu	Leu Gln Ala Ser Phe	Val Asp Leu		
4550	4555	4560		
Leu Val Gly Glu Ser Ala Arg	Lys Asp Ser Ile Ala	Gly Pro Glu		
4565	4570	4575		
Val Leu Ala Gln Gln Gln Ala	Val Met Ala Ala Val	Glu Ala Glu		
4580	4585	4590		
Ile Lys Gln Lys Asn Ser Val	Glu Asn Pro Ser Ala	Phe Ser Thr		
4595	4600	4605		
Ile Asp Ile Asn Ala Tyr Thr	His Arg Ala Leu Ser	Phe Leu Ala		
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Arg Asn Phe Tyr Asn Leu Lys	Tyr Val Ala Leu Val	Leu Ala Phe		
4625	4630	4635		
Cys Ile Asn Phe Ile Leu Leu	Phe Tyr Lys Val Thr	Thr Leu Ala		
4640	4645	4650		
Asp Asp Leu Ser Asp Asp Gly	Asp Val Lys Glu Phe	Ala Leu Gly		
4655	4660	4665		
Ser Ala Gly Ile Ser Asn Asp	Asp Ile Asp Asp Ser	Asn Ser Thr		
4670	4675	4680		
Glu Met Ala Asp Asp Asp Gly	Ala Leu Glu Leu Val	His Val Asn		
4685	4690	4695		
Glu Asp Phe Phe Tyr Met Ala	His Val Met Arg Leu	Ala Ala Leu		
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Leu His Ser Leu Ala Ser Leu	Ala Met Leu Ile Ala	Tyr Tyr His		
4715	4720	4725		
Leu Lys Val Pro Leu Ala Ile	Phe Lys Arg Glu Lys	Glu Ile Ala		
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Arg Arg Leu Glu Phe Asp Gly	Leu Tyr Ile Val Glu	Gln Pro Glu		
4745	4750	4755		
Asp Asp Asp Ile Lys Ser His	Trp Asp Lys Leu Val	Ile Ser Ala		
4760	4765	4770		
Lys Ser Phe Pro Val Asn Tyr	Trp Asp Lys Phe Ala	Lys Lys Lys		
4775	4780	4785		
Val Arg Gln Lys Tyr Ser Glu	Thr Tyr Asp Phe Asp	Ser Ile Ser		
4790	4795	4800		
Asn Ser Leu Gly Met Glu Lys	Thr Ser Phe Ser Thr	Gln Glu Asn		



4805	4810	4815
Glu Glu Arg Thr Gly Leu Ile	Asn Phe Val Ile	Asn Ile Asp Trp
4820	4825	4830
Arg Tyr Gln Val Trp Lys	Ala Gly Val Thr Ile	Thr Asp Asn Ala
4835	4840	4845
Phe Leu Tyr Ser Leu Trp	Tyr Phe Thr Phe Ser	Ile Leu Gly Asn
4850	4855	4860
Phe Asn Asn Phe Phe Phe	Ala Ala His Leu Leu	Asp Val Ala Val
4865	4870	4875
Gly Phe Lys Thr Leu Arg	Thr Ile Leu Gln Ser	Val Thr His Asn
4880	4885	4890
Gly Lys Gln Leu Val Leu	Thr Val Leu Leu Leu	Thr Ile Ile Val
4895	4900	4905
Tyr Ile Tyr Thr Val Ile	Ala Phe Asn Phe Phe	Arg Lys Phe Tyr
4910	4915	4920
Val Gln Glu Glu Asp Asp	Glu Val Asp Lys Lys	Cys His Asp Met
4925	4930	4935
Leu Thr Cys Phe Val Phe	His Leu Tyr Lys Gly	Val Arg Ala Gly
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Gly Gly Ile Gly Asp Glu	Ile Gly Ser Pro Asp	Gly Asp Asp Tyr
4955	4960	4965
Glu Val Tyr Arg Ile Met	Phe Asp Ile Thr Phe	Phe Phe Phe Val
4970	4975	4980
Ile Ile Ile Leu Leu Ala	Ile Ile Gln Gly Leu	Ile Ile Asp Ala
4985	4990	4995
Phe Gly Glu Leu Arg Asp	Gln Leu Glu Ser Val	Lys Glu Asp Met
5000	5005	5010
Glu Ser Asn Cys Phe Ile	Cys Gly Ile Gly Lys	Asp Tyr Phe Asp
5015	5020	5025
Lys Val Pro His Gly Phe	Asp Thr His Val Gln	Glu Glu His Asn
5030	5035	5040
Leu Ala Asn Tyr Met Phe	Phe Leu Met His Leu	Ile Asn Lys Pro
5045	5050	5055
Asp Thr Glu Tyr Thr Gly	Gln Glu Thr Tyr Val	Trp Asn Met Tyr
5060	5065	5070
Gln Gln Arg Cys Trp Asp	Phe Phe Pro Val Gly	Asp Cys Phe Arg
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Lys Gln Tyr Glu Glu Glu	Leu Gly Gly Gly Gly	Gly Val
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 cgg acc gaa gat atg gtg tgt tta tca tgc act gcg act gga gaa aga 96  
 Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu Arg  
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 Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Tyr Leu Glu  
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 Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val Phe  
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 gtc att gaa caa gca tta tca gtg aga gct tta caa gaa cta gtt aca 240  
 Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65 70 75 80  
 gct aca agt tct caa gaa gga aaa ggt gga act gga tct gga cac cga 288  
 Ala Thr Ser Ser Gln Glu Gly Lys Gly Gly Thr Gly Ser Gly His Arg  
 85 90 95  
 aca ttg ttg tat gga aat gct att tta tta cgt cat caa aat agc gat 336  
 Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His Gln Asn Ser Asp  
 100 105 110  
 atg tat tta gct tgt tta tca aca agt tcg tca aat gat aaa tta tct 384  
 Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser  
 115 120 125  
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 Phe Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp  
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 act gtg cat cca gca tcg aaa caa cga tca gag ggt gaa aaa gtt aga 480  
 Thr Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg  
 145 150 155 160  
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 Val Gly Asp Asp Ile Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu  
 165 170 175  
 cac acc gcc aaa gaa aat gag tta tct gta gtt aat gca tca ttt cac 576  
 His Thr Ala Lys Glu Asn Glu Leu Ser Val Val Asn Ala Ser Phe His  
 180 185 190  
 gta act cat tgg tca gta caa cca tat ggt act ggt atc agt aga atg 624  
 Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met  
 195 200 205  
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 Lys Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His  
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 Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Ser Asn Val Ser  
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Arg Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Ala Gly Gly	
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Phe Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Leu Thr Thr Gly	
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Arg Tyr Leu Gly Val Asn Glu Asn Asn Glu Leu His Leu Val Cys Arg	
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Glu Glu Ala Thr Thr Ala Ser Ser Thr Phe Phe Leu Arg Gln Glu Lys	
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Gly Val Gly Lys Val Glu Glu Lys Gln Ala Val Leu His Glu Glu Gly	
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Lys Met Asp Asp Gly Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser	
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Arg Thr Ala Arg Val Ile Arg Lys Cys Ser Ser Leu Phe Thr Gln Phe	
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Ile Ser Gly Leu Glu Asn Leu Gln Ser Asn Arg Arg Ser Ser Leu Phe	
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Cys Ser Phe Val Asn Leu Asn Glu Met Val Met Cys Leu Glu Asp Leu	
435 440 445	
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Ile Asn Tyr Phe Ala Gln Pro Glu Glu Asp Met Glu His Glu Glu Lys	
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Gln Asn Arg Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu	
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Glu Gly Ile Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Val Asn Ile	
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Ile Thr Ser Gln Gly Phe Met Val Ser Leu Ala Gly Asp Glu Ser Gly	
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Gln Ser Trp Asp Val Ile Ser Gly Tyr Leu Tyr Gln Leu Leu Ala Ala	
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Ile Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Thr Asn	
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Gly Thr Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro	
565 570 575	

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Glu Ala Leu Asn Met Met Lys Asp Glu His Ile Lys Val Ile Ile Ser	
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Leu Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys	
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Ser Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn	
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Ile Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Leu	
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645 650 655	
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Val Ser Gly Ser Ala Val Tyr Arg Lys Trp Tyr Tyr Glu Val Ala Ile	
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Asp His Val Glu Gln Thr Thr His Leu Asn Pro His Ile Arg Ile Gly	
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Trp Ala Asn Thr Ala Gly Tyr Val Pro Tyr Pro Gly Gly Gly Glu Lys	
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Gln Gly Ala Phe Arg Asp Phe Asn Leu Asp Gly Met Phe Phe Pro Val	
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His Gly Arg Leu Lys Phe Thr Pro Pro Asp Glu Phe Ser Pro Leu Phe	
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Glu Ser Leu Leu Pro Gln Gln Ile Leu Thr Ile Asp Pro Cys Phe Tyr	
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Phe Gly Asn Leu Ser Lys Cys Val Leu Thr Gly Pro Trp Tyr Val Glu	
835 840 845	
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Asp Asp Thr Ala Phe Val Pro Asn Pro Val Asp Thr Ser Met Val Thr	
850 855 860	
tta cct agt tac ata gaa aat att aaa gat aaa tta gca gag aat att	2640
Leu Pro Ser Tyr Ile Glu Asn Ile Lys Asp Lys Leu Ala Glu Asn Ile	
865 870 875 880	
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Asp	Lys	Leu	Pro	Pro	Ala	Glu	Lys	Arg	Tyr	Asp	Ser	Gln	Leu	Ala	Val	
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Gln	Thr	Leu	Lys	Thr	Val	Ile	Ala	Leu	Gly	Tyr	His	Ile	Ser	Ile	Asp	
	930					935					940					
aat	cca	ccg	tcc	cgc	att	aaa	acg	gta	cgg	ttg	ccc	aac	gaa	cca	ttt	2880
Asn	Pro	Pro	Ser	Arg	Ile	Lys	Thr	Val	Arg	Leu	Pro	Asn	Glu	Pro	Phe	
	945				950				955				960			
atg	caa	tcc	aat	ggg	tac	aaa	cca	gca	cca	cta	gat	tta	tct	gca	ata	2928
Met	Gln	Ser	Asn	Gly	Tyr	Lys	Pro	Ala	Pro	Leu	Asp	Leu	Ser	Ala	Ile	
			965				970					975				
aat	ttg	tca	ggg	aaa	atg	gaa	gaa	tta	att	gac	cag	tta	gct	gag	aat	2976
Asn	Leu	Ser	Gly	Lys	Met	Glu	Glu	Leu	Ile	Asp	Gln	Leu	Ala	Glu	Asn	
		980					985					990				
aca	cat	aat	tta	tgg	gca	aaa	gaa	aga	ata	caa	caa	gga	tgg	acg	tat	3024
Thr	His	Asn	Leu	Trp	Ala	Lys	Glu	Arg	Ile	Gln	Gln	Gly	Trp	Thr	Tyr	
		995				1000						1005				
ggg	tta	aat	gaa	gaa	tta	caa	atg	tta	cgc	agt	cct	cat	tta	gta		3069
Gly	Leu	Asn	Glu	Glu	Leu	Gln	Met	Leu	Arg	Ser	Pro	His	Leu	Val		
	1010					1015					1020					
ccg	tac	agc	aaa	gta	gat	gac	gct	att	aaa	aaa	gct	aat	aga	gat		3114
Pro	Tyr	Ser	Lys	Val	Asp	Asp	Ala	Ile	Lys	Lys	Ala	Asn	Arg	Asp		
	1025					1030					1035					
aca	gca	agt	gaa	aca	gtc	cgc	act	tta	tta	gta	tat	ggg	tac	aac		3159
Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr	Leu	Leu	Val	Tyr	Gly	Tyr	Asn		
	1040					1045					1050					
tta	gac	cca	ccg	act	gga	gaa	aca	aac	gaa	gcg	aca	ctc	cta	aca		3204
Leu	Asp	Pro	Pro	Thr	Gly	Glu	Thr	Asn	Glu	Ala	Thr	Leu	Leu	Thr		
	1055					1060					1065					
gac	gaa	aac	act	aat	aga	tac	ttg	acg	ttc	aga	aca	tat	cgt	gct		3249
Asp	Glu	Asn	Thr	Asn	Arg	Tyr	Leu	Thr	Phe	Arg	Thr	Tyr	Arg	Ala		
	1070					1075					1080					
gaa	aaa	aca	tat	gct	gtt	gca	agt	gga	aaa	tgg	tat	ttc	gag	ttt		3294
Glu	Lys	Thr	Tyr	Ala	Val	Ala	Ser	Gly	Lys	Trp	Tyr	Phe	Glu	Phe		
	1085					1090					1095					
gag	ata	ttg	aca	aac	ggg	ccc	atg	cga	gtt	gga	tgg	gcc	agg	ttt		3339
Glu	Ile	Leu	Thr	Asn	Gly	Pro	Met	Arg	Val	Gly	Trp	Ala	Arg	Phe		
	1100					1105					1110					
aca	tgt	tct	ccg	ggg	tat	caa	atc	ggg	agt	gac	gaa	aat	tct	tgg		3384
Thr	Cys	Ser	Pro	Gly	Tyr	Gln	Ile	Gly	Ser	Asp	Glu	Asn	Ser	Trp		
	1115					1120					1125					
gca	ttt	gat	ggg	tat	aac	gaa	gaa	aaa	att	tat	atg	ggc	aca	gcc		3429
Ala	Phe	Asp	Gly	Tyr	Asn	Glu	Glu	Lys	Ile	Tyr	Met	Gly	Thr	Ala		
	1130					1135					1140					
gaa	tca	ttt	ggg	agg	cag	tgg	caa	gtt	gga	gat	gtc	gtg	gga	gtg		3474
Glu	Ser	Phe	Gly	Arg	Gln	Trp	Gln	Val	Gly	Asp	Val	Val	Gly	Val		
	1145					1150					1155					
ttt	tta	gac	cta	atg	gat	cat	aca	ata	agt	ttt	tcg	ttg	aat	gga		3519
Phe	Leu	Asp	Leu	Met	Asp	His	Thr	Ile	Ser	Phe	Ser	Leu	Asn	Gly		
	1160					1165					1170					
gaa	tta	cta	atg	gat	aca	ttg	gga	gga	gaa	act	acg	ttt	tct	gaa		3564
Glu	Leu	Leu	Met	Asp	Thr	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ser	Glu		
	1175					1180					1185					
gtt	caa	gga	gaa	gga	ttt	gta	cct	gca	ttt	act	ctg	gga	cta	gga		3609
Val	Gln	Gly	Glu	Gly	Phe	Val	Pro	Ala	Phe	Thr	Leu	Gly	Leu	Gly		
	1190					1195					1200					

caa aaa	gca aaa	tta act	ttt ggt	caa gac	gta aac	tca ttg	aaa	3654
Gln Lys	Ala Lys	Leu Thr	Phe Gly	Gln Asp	Val Asn	Ser Leu	Lys	
1205			1210		1215			
tac ttc	acg act	tgt ggt	ctt caa	gaa gga	tat gaa	cca ttt	tgc	3699
Tyr Phe	Thr Thr	Cys Gly	Leu Gln	Glu Gly	Tyr Glu	Pro Phe	Cys	
1220			1225		1230			
gta aac	atg aag	aga cca	gta aca	tat tgg	tat act	aag gat	caa	3744
Val Asn	Met Lys	Arg Pro	Val Thr	Tyr Trp	Tyr Thr	Lys Asp	Gln	
1235			1240		1245			
cca ata	ttt gaa	aat act	gat gac	ttt tct	tct gta	att gat	gtt	3789
Pro Ile	Phe Glu	Asn Thr	Asp Asp	Phe Ser	Ser Ser	Val Ile	Asp Val	
1250			1255		1260			
aca aga	att cca	gct ggt	tca gat	aca cca	ccg tgt	cta aaa	ata	3834
Thr Arg	Ile Pro	Ala Gly	Ser Asp	Thr Pro	Pro Cys	Leu Lys	Ile	
1265			1270		1275			
agt cat	aat aca	ttt gaa	acc atg	gaa aga	gct aat	tgg gaa	ttt	3879
Ser His	Asn Thr	Phe Glu	Thr Met	Glu Arg	Ala Asn	Trp Glu	Phe	
1280			1285		1290			
tta cgg	cta tct	ttg cct	gtc ata	tgt cta	cca aat	ttt att	gat	3924
Leu Arg	Leu Ser	Leu Pro	Val Ile	Cys Leu	Pro Asn	Phe Ile	Asp	
1295			1300		1305			
gaa caa	gaa aaa	caa agg	aga tgg	caa gaa	atc aga	att agg	cag	3969
Glu Gln	Glu Lys	Gln Arg	Arg Trp	Gln Glu	Ile Arg	Ile Arg	Gln	
1310			1315		1320			
cac agg	tta ttg	tca caa	tct gag	cat gct	act cct	gct cat	att	4014
His Arg	Leu Leu	Ser Gln	Ser Glu	His Ala	Thr Pro	Ala His	Ile	
1325			1330		1335			
gaa caa	ata atg	aaa tca	gga ttt	tca atg	agt gat	ata aaa	ggt	4059
Glu Gln	Ile Met	Lys Ser	Gly Phe	Ser Met	Ser Asp	Ile Lys	Gly	
1340			1345		1350			
ctt cat	cga ggt	tat tct	gat gat	cct gta	gaa aac	gat gaa	atg	4104
Leu His	Arg Gly	Tyr Ser	Asp Asp	Pro Val	Glu Asn	Asp Glu	Met	
1355			1360		1365			
atg cca	aac act	gca cct	tta cca	cca aga	gga aaa	aat caa	cca	4149
Met Pro	Asn Thr	Ala Pro	Leu Pro	Pro Pro	Arg Gly	Lys Asn	Gln Pro	
1370			1375		1380			
cca cca	ccc aga	cca cca	cga aaa	ggg tct	tta tct	aga cac	gat	4194
Pro Pro	Pro Arg	Pro Pro	Arg Lys	Gly Ser	Leu Ser	Arg His	Asp	
1385			1390		1395			
gac tta	acg atc	gaa aat	gac gga	aag ttg	aat cgt	tca tct	agt	4239
Asp Leu	Thr Ile	Glu Asn	Asp Gly	Lys Leu	Asn Arg	Ser Ser	Ser	
1400			1405		1410			
gaa ttg	aat ttt	aac ata	tat aat	cag caa	aac ggt	aat ggc	cag	4284
Glu Leu	Asn Phe	Asn Ile	Tyr Asn	Gln Gln	Asn Gly	Asn Gly	Gln	
1415			1420		1425			
gac ata	aac aaa	gat gac	aag aaa	aaa aga	gga cgt	tct cca	ttt	4329
Asp Ile	Asn Lys	Asp Asp	Lys Lys	Lys Arg	Gly Arg	Ser Pro	Phe	
1430			1435		1440			
cga ttt	ttc tct	aga aaa	aaa gaa	ggg cct	tct gat	aat cct	aaa	4374
Arg Phe	Phe Ser	Arg Lys	Lys Glu	Gly Pro	Ser Asp	Asn Pro	Lys	
1445			1450		1455			
aga gca	aaa act	ccg gat	cca gct	aga aat	gtg gtt	aga tca	cgt	4419
Arg Ala	Lys Thr	Pro Asp	Pro Ala	Arg Asn	Val Val	Arg Ser	Arg	
1460			1465		1470			
aat gct	gct cac	aga cct	aat aca	tta aat	gaa aga	ata act	ccc	4464
Asn Ala	Ala His	Arg Pro	Asn Thr	Leu Asn	Glu Arg	Ile Thr	Pro	
1475			1480		1485			
caa ata	aga gtt	tca caa	atg gac	tta aaa	ttg gtt	cca cca	gct	4509
Gln Ile	Arg Val	Ser Gln	Met Asp	Leu Lys	Leu Val	Pro Pro	Ala	
1490			1495		1500			

att cct gat aga cca gga ggt cca aaa gca atg tca ttt aca cct	4554
Ile Pro Asp Arg Pro Gly Gly Pro Lys Ala Met Ser Phe Thr Pro	
1505 1510 1515	
tca tca gca ggg att gaa ttc gtg gga aat gaa ata ttt gat tta	4599
Ser Ser Ala Gly Ile Glu Phe Val Gly Asn Glu Ile Phe Asp Leu	
1520 1525 1530	
gaa tgt tta aaa tta ata aac gag tat tac tat ggt gta aga ata	4644
Glu Cys Leu Lys Leu Ile Asn Glu Tyr Tyr Tyr Gly Val Arg Ile	
1535 1540 1545	
ttt ccc ggc caa gac cct aca cac gtt tac gtg gga tgg gtt act	4689
Phe Pro Gly Gln Asp Pro Thr His Val Tyr Val Gly Trp Val Thr	
1550 1555 1560	
act caa ttt cat ctc cat agt aaa gat ttc agt caa aat cat gtt	4734
Thr Gln Phe His Leu His Ser Lys Asp Phe Ser Gln Asn His Val	
1565 1570 1575	
cga aaa agt act gtt aca att gtc gat gaa cat aat aga att tta	4779
Arg Lys Ser Thr Val Thr Ile Val Asp Glu His Asn Arg Ile Leu	
1580 1585 1590	
gaa agt att gat cga caa agc tgt tac atg gtt cga tcc gat gag	4824
Glu Ser Ile Asp Arg Gln Ser Cys Tyr Met Val Arg Ser Asp Glu	
1595 1600 1605	
tta tac aac gaa gta aca aat gat tcg tcg ggg aag gga gca tct	4869
Leu Tyr Asn Glu Val Thr Asn Asp Ser Ser Gly Lys Gly Ala Ser	
1610 1615 1620	
caa gga atg gct ata ggt tgt ttt att gat ata gct act gga gtg	4914
Gln Gly Met Ala Ile Gly Cys Phe Ile Asp Ile Ala Thr Gly Val	
1625 1630 1635	
atg tca ttt aca tgt gaa gga aaa gaa act agt ttt aaa ttt aaa	4959
Met Ser Phe Thr Cys Glu Gly Lys Glu Thr Ser Phe Lys Phe Lys	
1640 1645 1650	
atg gaa cca gat att aaa tta ttc cct gca ata ttt gtg gaa gct	5004
Met Glu Pro Asp Ile Lys Leu Phe Pro Ala Ile Phe Val Glu Ala	
1655 1660 1665	
agt agc aaa gag ata tta caa att gaa ttg ggt aga act tct act	5049
Ser Ser Lys Glu Ile Leu Gln Ile Glu Leu Gly Arg Thr Ser Thr	
1670 1675 1680	
aca ctt cca tta tct gca gct gtt tta caa aat tca gaa cgc cat	5094
Thr Leu Pro Leu Ser Ala Ala Val Leu Gln Asn Ser Glu Arg His	
1685 1690 1695	
gtt ctt cct cag ttt cca ccg aga tta aaa gtt caa tgt tta aga	5139
Val Leu Pro Gln Phe Pro Pro Arg Leu Lys Val Gln Cys Leu Arg	
1700 1705 1710	
cca cat caa tgg gct aga gtt cca aat gat tct tta cac att cat	5184
Pro His Gln Trp Ala Arg Val Pro Asn Asp Ser Leu His Ile His	
1715 1720 1725	
act ctg aaa tta tct gac att aga ggg tgg agt ata ctt tgt gaa	5229
Thr Leu Lys Leu Ser Asp Ile Arg Gly Trp Ser Ile Leu Cys Glu	
1730 1735 1740	
gac cct gtg tcg atg att gca tta cac att ccc gaa gaa gat cga	5274
Asp Pro Val Ser Met Ile Ala Leu His Ile Pro Glu Glu Asp Arg	
1745 1750 1755	
tgt ata gat att tta gag ttg att gaa atg gag aaa tta cta tct	5319
Cys Ile Asp Ile Leu Glu Leu Ile Glu Met Glu Lys Leu Leu Ser	
1760 1765 1770	
ttc cat gct cac acg ttg act tta tat gca gct gtg tgc tat caa	5364
Phe His Ala His Thr Leu Thr Leu Tyr Ala Ala Val Cys Tyr Gln	
1775 1780 1785	
gct aac tac cga gct gct cac ata tta tgc act cat gta aat caa	5409
Ala Asn Tyr Arg Ala Ala His Ile Leu Cys Thr His Val Asn Gln	
1790 1795 1800	

aaa	caa	ttg	tta	tat	gct	ata	tgt	tca	gaa	tat	atg	tct	ggt	cca	5454
Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Cys	Ser	Glu	Tyr	Met	Ser	Gly	Pro	
1805						1810					1815				
ttg	cgt	caa	gga	ttt	tat	gat	ctc	tta	ata	gct	tta	cat	tta	gag	5499
Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Ile	Ala	Leu	His	Leu	Glu	
1820						1825					1830				
tcc	cat	gca	aca	aca	atg	gag	gtt	tgt	aaa	aat	gaa	tac	att	ata	5544
Ser	His	Ala	Thr	Thr	Met	Glu	Val	Cys	Lys	Asn	Glu	Tyr	Ile	Ile	
1835						1840					1845				
cca	ttg	ggg	cat	gaa	cta	act	gct	tta	tac	gat	gat	cca	caa	atg	5589
Pro	Leu	Gly	His	Glu	Leu	Thr	Ala	Leu	Tyr	Asp	Asp	Pro	Gln	Met	
1850						1855					1860				
ggt	cat	agc	tta	cgg	tcg	tta	caa	act	gaa	tct	gtt	cga	cct	caa	5634
Gly	His	Ser	Leu	Arg	Ser	Leu	Gln	Thr	Glu	Ser	Val	Arg	Pro	Gln	
1865						1870					1875				
atg	aaa	atg	act	gaa	att	tca	gac	gtt	att	gac	aat	gtt	cga	aac	5679
Met	Lys	Met	Thr	Glu	Ile	Ser	Asp	Val	Ile	Asp	Asn	Val	Arg	Asn	
1880						1885					1890				
tta	tac	agt	cct	tat	ttc	cca	ttg	caa	gta	gtt	aga	gaa	tat	gta	5724
Leu	Tyr	Ser	Pro	Tyr	Phe	Pro	Leu	Gln	Val	Val	Arg	Glu	Tyr	Val	
1895						1900					1905				
atg	gca	gcc	cta	gaa	gaa	gca	gtg	tta	gtt	aat	cag	gtt	cat	aat	5769
Met	Ala	Ala	Leu	Glu	Glu	Ala	Val	Leu	Val	Asn	Gln	Val	His	Asn	
1910						1915					1920				
aga	gat	cct	att	ggt	gga	tct	aat	gaa	aac	ttg	ttt	tta	cca	tta	5814
Arg	Asp	Pro	Ile	Gly	Gly	Ser	Asn	Glu	Asn	Leu	Phe	Leu	Pro	Leu	
1925						1930					1935				
tta	aaa	tta	gtg	gat	cgt	ctt	tta	ctt	gtc	ggt	atg	tta	cgt	gat	5859
Leu	Lys	Leu	Val	Asp	Arg	Leu	Leu	Leu	Val	Gly	Met	Leu	Arg	Asp	
1940						1945					1950				
gaa	gat	gta	gaa	aaa	tta	ttg	ata	atg	att	aat	cca	gaa	act	tgg	5904
Glu	Asp	Val	Glu	Lys	Leu	Leu	Ile	Met	Ile	Asn	Pro	Glu	Thr	Trp	
1955						1960					1965				
gat	cct	gaa	ttt	caa	aaa	gat	ggt	ccc	gat	gaa	cat	aga	aaa	ggt	5949
Asp	Pro	Glu	Phe	Gln	Lys	Asp	Gly	Pro	Asp	Glu	His	Arg	Lys	Gly	
1970						1975					1980				
tta	tta	cac	atg	aaa	atg	gct	gag	ggt	gca	aaa	ctt	caa	atg	tgt	5994
Leu	Leu	His	Met	Lys	Met	Ala	Glu	Gly	Ala	Lys	Leu	Gln	Met	Cys	
1985						1990					1995				
tat	tta	tta	cat	cat	tta	tgt	gat	att	caa	ctg	agg	cat	agg	gtt	6039
Tyr	Leu	Leu	His	His	Leu	Cys	Asp	Ile	Gln	Leu	Arg	His	Arg	Val	
2000						2005					2010				
gaa	tcg	ata	atc	tct	ttt	agt	tat	caa	ttt	gtc	aat	gat	ata	caa	6084
Glu	Ser	Ile	Ile	Ser	Phe	Ser	Tyr	Gln	Phe	Val	Asn	Asp	Ile	Gln	
2015						2020					2025				
ata	gat	caa	tta	aga	aga	tat	aat	gaa	ata	aaa	caa	tca	gat	tta	6129
Ile	Asp	Gln	Leu	Arg	Arg	Tyr	Asn	Glu	Ile	Lys	Gln	Ser	Asp	Leu	
2030						2035					2040				
cca	tct	gct	gtt	gct	gca	aaa	aag	acg	aga	gag	ttc	cga	tgt	ccg	6174
Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Arg	Glu	Phe	Arg	Cys	Pro	
2045						2050					2055				
cct	cgt	gaa	caa	atg	aat	gca	ata	cta	ggc	ttt	aaa	aat	ttg	gat	6219
Pro	Arg	Glu	Gln	Met	Asn	Ala	Ile	Leu	Gly	Phe	Lys	Asn	Leu	Asp	
2060						2065					2070				
agt	gat	gat	aaa	gaa	aat	tgt	ttg	ata	ggt	gat	gaa	ctt	cgt	gaa	6264
Ser	Asp	Asp	Lys	Glu	Asn	Cys	Leu	Ile	Gly	Asp	Glu	Leu	Arg	Glu	
2075						2080					2085				
aga	atg	aac	gaa	ttt	aat	gag	aaa	ctc	atg	aaa	caa	ata	tta	tta	6309
Arg	Met	Asn	Glu	Phe	Asn	Glu	Lys	Leu	Met	Lys	Gln	Ile	Leu	Leu	
2090						2095					2100				



gta gct	ctt caa gaa tca gaa	gat gac aaa tta gat	ttg aat aac	6354
Val Ala	Leu Gln Glu Ser Glu	Asp Asp Lys Leu Asp	Leu Asn Asn	
2105	2110	2115		
ata aac	aga gaa ggt aaa ata	aaa caa ttt tat aac	ttt ata aat	6399
Ile Asn	Arg Glu Gly Lys Ile	Lys Gln Phe Tyr Asn	Phe Ile Asn	
2120	2125	2130		
gca gtg	aaa gat gaa gca aat	gaa aat ggt ctg aac	gaa cat gaa	6444
Ala Val	Lys Asp Glu Ala Asn	Glu Asn Gly Leu Asn	Glu His Glu	
2135	2140	2145		
aaa aaa	ata cca gaa gaa ata	ttt aga aaa gtt tta	ata acc act	6489
Lys Lys	Ile Pro Glu Glu Ile	Phe Arg Lys Val Leu	Ile Thr Thr	
2150	2155	2160		
att gta	tca tgg gct gaa gaa	act caa att gaa aca	cca aaa tta	6534
Ile Val	Ser Trp Ala Glu Glu	Thr Gln Ile Glu Thr	Pro Lys Leu	
2165	2170	2175		
gtt aga	gaa atg ttc agt tta	ttg gtt agg cag tat	gat agt gta	6579
Val Arg	Glu Met Phe Ser Leu	Leu Val Arg Gln Tyr	Asp Ser Val	
2180	2185	2190		
gga gaa	ttg att cgt gca tta	gag aaa aca tat gta	att aat ttt	6624
Gly Glu	Leu Ile Arg Ala Leu	Glu Lys Thr Tyr Val	Ile Asn Phe	
2195	2200	2205		
aaa aca	aaa gaa gat gtt gct	caa atg tgg gtt gga	ctt agt caa	6669
Lys Thr	Lys Glu Asp Val Ala	Gln Met Trp Val Gly	Leu Ser Gln	
2210	2215	2220		
atc cgt	tct ttg ttg cca gtg	caa atg tca caa gaa	gaa gaa gaa	6714
Ile Arg	Ser Leu Leu Pro Val	Gln Met Ser Gln Glu	Glu Glu Glu	
2225	2230	2235		
ttg atg	aga gaa cga tta tgg	aaa ctg gta aat aac	cac aca ttt	6759
Leu Met	Arg Glu Arg Leu Trp	Lys Leu Val Asn Asn	His Thr Phe	
2240	2245	2250		
ttc caa	cat cct gat tta ata	aga gtt ctt cgg atg	cac gaa aat	6804
Phe Gln	His Pro Asp Leu Ile	Arg Val Leu Arg Met	His Glu Asn	
2255	2260	2265		
gtt atg	gct gtc atg atg aat	aca ctg gga aga aga	gct caa gcc	6849
Val Met	Ala Val Met Met Asn	Thr Leu Gly Arg Arg	Ala Gln Ala	
2270	2275	2280		
caa tcg	caa cca ggt gga act	act gta acg gga caa	gat gga gaa	6894
Gln Ser	Gln Pro Gly Gly Thr	Thr Val Thr Gly Gln	Asp Gly Glu	
2285	2290	2295		
atc gtt	ccg aaa gaa aag gat	aca tca cat gaa atg	gtc gta gct	6939
Ile Val	Pro Lys Glu Lys Asp	Thr Ser His Glu Met	Val Val Ala	
2300	2305	2310		
tgt tgt	cgg ttc tta tgt tat	ttt tgc cgt aca tcc	agg caa aac	6984
Cys Cys	Arg Phe Leu Cys Tyr	Phe Cys Arg Thr Ser	Arg Gln Asn	
2315	2320	2325		
caa aaa	gcc atg ttt gac cat	ttt tca ttt tta tta	gaa aat agt	7029
Gln Lys	Ala Met Phe Asp His	Phe Ser Phe Leu Leu	Glu Asn Ser	
2330	2335	2340		
aac ata	ttg ctc tct aga ccg	tca cta aga gga agt	aca cca ctc	7074
Asn Ile	Leu Leu Ser Arg Pro	Ser Leu Arg Gly Ser	Thr Pro Leu	
2345	2350	2355		
gat gtt	gct tat tcg tca ctc	atg gaa aat act gaa	ctt gca tta	7119
Asp Val	Ala Tyr Ser Ser Leu	Met Glu Asn Thr Glu	Leu Ala Leu	
2360	2365	2370		
gcg ttg	aga gaa cat tat ttg	gaa aag atc gcg ata	tat ttg tct	7164
Ala Leu	Arg Glu His Tyr Leu	Glu Lys Ile Ala Ile	Tyr Leu Ser	
2375	2380	2385		
cga tgt	ggg ttg caa tct aat	tct gaa ttg att gag	aaa gga tat	7209
Arg Cys	Gly Leu Gln Ser Asn	Ser Glu Leu Ile Glu	Lys Gly Tyr	
2390	2395	2400		

cct gat tta gga tgg gac cca	gtg gaa gga gaa aga	tat tta gac	7254
Pro Asp Leu Gly Trp Asp Pro	Val Glu Gly Glu Arg	Tyr Leu Asp	
2405	2410	2415	
ttt cta cga ttt tgt gtt tgg	gtc aac ggt gaa agt	gta gag gaa	7299
Phe Leu Arg Phe Cys Val Trp	Val Asn Gly Glu Ser	Val Glu Glu	
2420	2425	2430	
aat gca aat tta gtt att cgt	ttg ctt att cgc agg	cct gag tgt	7344
Asn Ala Asn Leu Val Ile Arg	Leu Leu Ile Arg Arg	Pro Glu Cys	
2435	2440	2445	
ttg ggt cct gca tta aga gga	gaa gga gaa gga ctt	tta cgt gcc	7389
Leu Gly Pro Ala Leu Arg Gly	Glu Gly Glu Gly Leu	Leu Arg Ala	
2450	2455	2460	
ata att gat gca aat aaa atg	tct gaa aga ata gca	gaa cga aga	7434
Ile Ile Asp Ala Asn Lys Met	Ser Glu Arg Ile Ala	Glu Arg Arg	
2465	2470	2475	
aag ttc tta gaa gaa tcc ggg	aac caa gaa aat att	caa tta gat	7479
Lys Phe Leu Glu Glu Ser Gly	Asn Gln Glu Asn Ile	Gln Leu Asp	
2480	2485	2490	
cat ccg ctt ccg gaa tcc gag	gac gat gaa gat tat	att gat acg	7524
His Pro Leu Pro Glu Ser Glu	Asp Asp Glu Asp Tyr	Ile Asp Thr	
2495	2500	2505	
gga gct gcc att tta aat ttt	tac tgt act ctt gtt	gac tta cta	7569
Gly Ala Ala Ile Leu Asn Phe	Tyr Cys Thr Leu Val	Asp Leu Leu	
2510	2515	2520	
gga cga tgt gca ccg gac agt	tca gta att gca ctg	ggg aag aat	7614
Gly Arg Cys Ala Pro Asp Ser	Ser Val Ile Ala Leu	Gly Lys Asn	
2525	2530	2535	
gaa tct tta cgt gca aga gcc	att ctg aga tca tta	gta cca ctt	7659
Glu Ser Leu Arg Ala Arg Ala	Ile Leu Arg Ser Leu	Val Pro Leu	
2540	2545	2550	
gaa gat tta cac ggt gtt ctt	agt ctt aga ttt aca	tta cag aat	7704
Glu Asp Leu His Gly Val Leu	Ser Leu Arg Phe Thr	Leu Gln Asn	
2555	2560	2565	
cca gct gct ggt caa gat cga	cca aag agt gat atg	ccc tca ggg	7749
Pro Ala Ala Gly Gln Asp Arg	Pro Lys Ser Asp Met	Pro Ser Gly	
2570	2575	2580	
tta ata cca gga cac aaa caa	agt gtt gtt ctc ttt	tta gaa cga	7794
Leu Ile Pro Gly His Lys Gln	Ser Val Val Leu Phe	Leu Glu Arg	
2585	2590	2595	
gtg tat ggt atc gaa atg caa	gag tta ttt ttc aca	tta cta gag	7839
Val Tyr Gly Ile Glu Met Gln	Glu Leu Phe Phe Thr	Leu Leu Glu	
2600	2605	2610	
gaa gca ttt tta cca gat cta	cgt aca gca aca atg	ctt gat aga	7884
Glu Ala Phe Leu Pro Asp Leu	Arg Thr Ala Thr Met	Leu Asp Arg	
2615	2620	2625	
aat gat gga ctt gaa tca gac	atg gca ttg gca atg	aat aga tat	7929
Asn Asp Gly Leu Glu Ser Asp	Met Ala Leu Ala Met	Asn Arg Tyr	
2630	2635	2640	
att gga aat tca gta tta ccg	tta ctc att ggt cat	tca aaa ttc	7974
Ile Gly Asn Ser Val Leu Pro	Leu Leu Ile Gly His	Ser Lys Phe	
2645	2650	2655	
tat agc gag tcc gat aac tat	gct aat ttg tta gat	gca acg tta	8019
Tyr Ser Glu Ser Asp Asn Tyr	Ala Asn Leu Leu Asp	Ala Thr Leu	
2660	2665	2670	
cac act gtg tat aga tta tcc	aaa aat aga atg tta	aca aaa ggg	8064
His Thr Val Tyr Arg Leu Ser	Lys Asn Arg Met Leu	Thr Lys Gly	
2675	2680	2685	
cag cga gaa gct gtt tca gac	ttt tta gta gca tta	act agt caa	8109
Gln Arg Glu Ala Val Ser Asp	Phe Leu Val Ala Leu	Thr Ser Gln	
2690	2695	2700	

atg	caa	cca	agt	atg	tta	tta	aaa	cta	ctg	aga	aaa	ctt	acg	gtt	8154
Met	Gln	Pro	Ser	Met	Leu	Leu	Lys	Leu	Leu	Arg	Lys	Leu	Thr	Val	
	2705					2710					2715				
gat	gtt	tca	aat	tta	tca	gag	tat	act	act	gta	gcg	ctt	aga	ttg	8199
Asp	Val	Ser	Asn	Leu	Ser	Glu	Tyr	Thr	Thr	Val	Ala	Leu	Arg	Leu	
	2720					2725					2730				
tta	act	ttg	cat	tac	gat	cga	tgt	gca	aaa	tac	tat	gga	tca	aca	8244
Leu	Thr	Leu	His	Tyr	Asp	Arg	Cys	Ala	Lys	Tyr	Tyr	Gly	Ser	Thr	
	2735					2740					2745				
ggg	ggg	caa	gga	att	tac	gga	gct	tct	agc	gac	gaa	gaa	aaa	aga	8289
Gly	Gly	Gln	Gly	Ile	Tyr	Gly	Ala	Ser	Ser	Asp	Glu	Glu	Lys	Arg	
	2750					2755					2760				
tta	acc	atg	atg	tta	ttc	agt	aac	ata	ttt	gat	tcc	ttg	tca	aaa	8334
Leu	Thr	Met	Met	Leu	Phe	Ser	Asn	Ile	Phe	Asp	Ser	Leu	Ser	Lys	
	2765					2770					2775				
atg	gac	tac	gat	cca	gaa	ctt	ttc	gga	aaa	gca	tta	cct	tgc	cta	8379
Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	Lys	Ala	Leu	Pro	Cys	Leu	
	2780					2785					2790				
tca	gca	att	gga	tgt	gct	ttg	cct	cca	gat	tat	tca	ctg	tca	aaa	8424
Ser	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr	Ser	Leu	Ser	Lys	
	2795					2800					2805				
aat	tat	gat	gac	gag	tggt	tat	ggg	tgc	aaa	cag	aat	att	caa	ggc	8469
Asn	Tyr	Asp	Asp	Glu	Trp	Tyr	Gly	Ser	Lys	Gln	Asn	Ile	Gln	Gly	
	2810					2815					2820				
cct	tct	gat	gga	cct	tac	aat	cca	caa	cca	ata	aac	acg	aat	agc	8514
Pro	Ser	Asp	Gly	Pro	Tyr	Asn	Pro	Gln	Pro	Ile	Asn	Thr	Asn	Ser	
	2825					2830					2835				
att	gtt	ctt	gat	aat	gac	ttg	aac	tct	att	gta	cat	aag	ttc	tca	8559
Ile	Val	Leu	Asp	Asn	Asp	Leu	Asn	Ser	Ile	Val	His	Lys	Phe	Ser	
	2840					2845					2850				
gaa	cat	tat	cat	gat	gca	tggt	gca	aat	cgt	aaa	ttg	gaa	aat	ggg	8604
Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Asn	Arg	Lys	Leu	Glu	Asn	Gly	
	2855					2860					2865				
tggt	gtt	tat	gga	gaa	caa	ttt	aat	gat	gtt	aat	aaa	agt	cat	cct	8649
Trp	Val	Tyr	Gly	Glu	Gln	Phe	Asn	Asp	Val	Asn	Lys	Ser	His	Pro	
	2870					2875					2880				
cgt	cta	aaa	cca	tac	atg	atg	ttg	agt	gaa	tac	gaa	aaa	gaa	cta	8694
Arg	Leu	Lys	Pro	Tyr	Met	Met	Leu	Ser	Glu	Tyr	Glu	Lys	Glu	Leu	
	2885					2890					2895				
tac	aaa	gaa	cct	gtg	aga	gag	tcc	ctt	aaa	gca	tta	ctt	gca	ata	8739
Tyr	Lys	Glu	Pro	Val	Arg	Glu	Ser	Leu	Lys	Ala	Leu	Leu	Ala	Ile	
	2900					2905					2910				
gga	tggt	agt	att	gaa	cat	tca	gag	aac	gat	gca	cca	ttg	aat	aat	8784
Gly	Trp	Ser	Ile	Glu	His	Ser	Glu	Asn	Asp	Ala	Pro	Leu	Asn	Asn	
	2915					2920					2925				
aga	gga	tct	gtt	cga	cgt	caa	tca	aag	tct	aat	gag	aat	gta	acg	8829
Arg	Gly	Ser	Val	Arg	Arg	Gln	Ser	Lys	Ser	Asn	Glu	Asn	Val	Thr	
	2930					2935					2940				
ccg	ttt	gac	tac	cat	ccg	aat	ccc	ata	gat	atg	act	aac	ctt	aca	8874
Pro	Phe	Asp	Tyr	His	Pro	Asn	Pro	Ile	Asp	Met	Thr	Asn	Leu	Thr	
	2945					2950					2955				
ctc	act	aga	gaa	atg	caa	aat	atg	gcg	gaa	aga	tta	gca	gaa	aac	8919
Leu	Thr	Arg	Glu	Met	Gln	Asn	Met	Ala	Glu	Arg	Leu	Ala	Glu	Asn	
	2960					2965					2970				
tcc	cat	gac	att	tggt	gct	aag	aag	aaa	aaa	gaa	gaa	gtt	atg	ttg	8964
Ser	His	Asp	Ile	Trp	Ala	Lys	Lys	Lys	Lys	Glu	Glu	Val	Met	Leu	
	2975					2980					2985				
tgt	gga	gga	ggg	att	cat	aat	caa	ttg	gtt	ccg	tat	gat	ttg	ctg	9009
Cys	Gly	Gly	Gly	Ile	His	Asn	Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu	
	2990					2995					3000				

acc gat	aaa gaa aag aaa	aaa gat	cga gaa cgc tca	caa gag ttc	9054
Thr Asp	Lys Glu Lys Lys	Lys Asp	Arg Glu Arg Ser	Gln Glu Phe	
3005		3010		3015	
ctt aaa	tat ttg cag tat	caa ggt	tat aaa tta cac	aga ccg aat	9099
Leu Lys	Tyr Leu Gln Tyr	Gln Gly	Tyr Lys Leu His	Arg Pro Asn	
3020		3025		3030	
cgt aat	gga gga cct tca	gat gct	gaa caa ttg gct	gct gca tca	9144
Arg Asn	Gly Gly Pro Ser	Asp Ala	Glu Gln Leu Ala	Ala Ala Ser	
3035		3040		3045	
aca ggg	gaa ctt cga ttt	tct tac	agt tta tta gaa	aaa ttg att	9189
Thr Gly	Glu Leu Arg Phe	Ser Tyr	Ser Leu Leu Glu	Lys Leu Ile	
3050		3055		3060	
cat tac	att gac aga gcg	tct ata	aac atg aca ctt	tta aag cct	9234
His Tyr	Ile Asp Arg Ala	Ser Ile	Asn Met Thr Leu	Leu Lys Pro	
3065		3070		3075	
tca ggc	aca ttt agc agg	cgt tct	agt ttc aaa atc	tgt aca aga	9279
Ser Gly	Thr Phe Ser Arg	Arg Ser	Ser Phe Lys Ile	Cys Thr Arg	
3080		3085		3090	
gat att	aaa ttt ttc tcc	aaa gtt	gtg cta ccg tta	ggt gag aaa	9324
Asp Ile	Lys Phe Phe Ser	Lys Val	Val Leu Pro Leu	Val Glu Lys	
3095		3100		3105	
tat ttt	agc act cat aga	aat tac	ttc ata acg gtt	gcg aca gct	9369
Tyr Phe	Ser Thr His Arg	Asn Tyr	Phe Ile Thr Val	Ala Thr Ala	
3110		3115		3120	
tca agt	ggt ttg ggt gca	gct tcg	tta aag gaa aaa	gaa atg gtc	9414
Ser Ser	Val Leu Gly Ala	Ala Ser	Leu Lys Glu Lys	Glu Met Val	
3125		3130		3135	
gct agt	tta ttt tgt aag	ttg gca	aat ctt ttg aga	tct aag tta	9459
Ala Ser	Leu Phe Cys Lys	Leu Ala	Asn Leu Leu Arg	Ser Lys Leu	
3140		3145		3150	
atg gcc	ttt gga gct gat	gtc cgt	ata acc gta cga	tgt cta caa	9504
Met Ala	Phe Gly Ala Asp	Val Arg	Ile Thr Val Arg	Cys Leu Gln	
3155		3160		3165	
gtg ctt	gtc aaa gct att	gat gct	aag tca ctc gta	aaa aac tgt	9549
Val Leu	Val Lys Ala Ile	Asp Ala	Lys Ser Leu Val	Lys Asn Cys	
3170		3175		3180	
cct gag	ttt att aga act	tca atg	ctt aca ttt ttc	cat aac atc	9594
Pro Glu	Phe Ile Arg Thr	Ser Met	Leu Thr Phe Phe	His Asn Ile	
3185		3190		3195	
gct gat	gat ttg gaa cat	aca att	caa aat ttg cat	gat agt cgt	9639
Ala Asp	Asp Leu Glu His	Thr Ile	Gln Asn Leu His	Asp Ser Arg	
3200		3205		3210	
tat tgt	tat ttg aga gga	act cat	ttg aaa aca tca	act tca tta	9684
Tyr Cys	Tyr Leu Arg Gly	Thr His	Leu Lys Thr Ser	Thr Ser Leu	
3215		3220		3225	
ttt tat	ggt aat gac gta	att tta	cca gtt tta tca	tcg ctt ttt	9729
Phe Tyr	Val Asn Asp Val	Ile Leu	Pro Val Leu Ser	Ser Ser Leu Phe	
3230		3235		3240	
gat cat	tta gct gca tat	gaa tat	gga aac gag cta	ttg tta aat	9774
Asp His	Leu Ala Ala Tyr	Glu Tyr	Gly Asn Glu Leu	Leu Leu Asn	
3245		3250		3255	
gaa att	caa gta gca gct	tat aaa	atg ttg agt agt	tta tat act	9819
Glu Ile	Gln Val Ala Ala	Tyr Lys	Met Leu Ser Ser	Leu Tyr Thr	
3260		3265		3270	
ctt ggc	aca gat aca tct	tta acg	cat gat aga aaa	tat tta aaa	9864
Leu Gly	Thr Asp Thr Ser	Leu Thr	His Asp Arg Lys	Tyr Leu Lys	
3275		3280		3285	
gta cag	ttg gaa aga cat	cgt ccg	gcg ttt ggt agt	tgc ttg ggt	9909
Val Gln	Leu Glu Arg His	Arg Pro	Ala Phe Gly Ser	Cys Leu Gly	
3290		3295		3300	

gca ttt agt tca aca ttt cct gtg gct ttc ctt gaa cca cat ctg	9954
Ala Phe Ser Ser Thr Phe Pro Val Ala Phe Leu Glu Pro His Leu	
3305 3310 3315	
aat aaa cac aat caa tat tcg ctt ctt aat cga ttt gct gac agt	9999
Asn Lys His Asn Gln Tyr Ser Leu Leu Asn Arg Phe Ala Asp Ser	
3320 3325 3330	
tca ttg gaa gct cag gat ata atg tct aga atg gaa ggc act atg	10044
Ser Leu Glu Ala Gln Asp Ile Met Ser Arg Met Glu Gly Thr Met	
3335 3340 3345	
cct act cta gaa act gta tta aat gaa gtt gac cag ttt gtc gaa	10089
Pro Thr Leu Glu Thr Val Leu Asn Glu Val Asp Gln Phe Val Glu	
3350 3355 3360	
tca gaa aaa aca tat gct gat gca cct cac att att gat gtt att	10134
Ser Glu Lys Thr Tyr Ala Asp Ala Pro His Ile Ile Asp Val Ile	
3365 3370 3375	
tta cct tta ttg tgt tca tac tta ccg tac tgg tgg gca caa ggt	10179
Leu Pro Leu Leu Cys Ser Tyr Leu Pro Tyr Trp Trp Ala Gln Gly	
3380 3385 3390	
cca gat aat gtt gct ctg acc aca ggt aat cat gtt aca atg gtg	10224
Pro Asp Asn Val Ala Leu Thr Thr Gly Asn His Val Thr Met Val	
3395 3400 3405	
acc agc gaa cat atg aac tgt cta tta aaa aat gtt tta aag tta	10269
Thr Ser Glu His Met Asn Cys Leu Leu Lys Asn Val Leu Lys Leu	
3410 3415 3420	
ata aaa aaa aat att gga aat gat aat gcc cct tgg atg aca caa	10314
Ile Lys Lys Asn Ile Gly Asn Asp Asn Ala Pro Trp Met Thr Gln	
3425 3430 3435	
ata gca gct tat aca caa caa ata att att aat tct tca gaa gaa	10359
Ile Ala Ala Tyr Thr Gln Gln Ile Ile Ile Asn Ser Ser Glu Glu	
3440 3445 3450	
tta tta aaa gat cca ttt cta cca ctt gca gaa cga gtt aaa aaa	10404
Leu Leu Lys Asp Pro Phe Leu Pro Leu Ala Glu Arg Val Lys Lys	
3455 3460 3465	
cgt aca gaa aca tta tac cat aaa gaa gaa tca tta aga gga ttt	10449
Arg Thr Glu Thr Leu Tyr His Lys Glu Glu Ser Leu Arg Gly Phe	
3470 3475 3480	
ata aaa tca tct act gat gat acg tcc caa atc gaa gca caa ata	10494
Ile Lys Ser Ser Thr Asp Asp Thr Ser Gln Ile Glu Ala Gln Ile	
3485 3490 3495	
caa gaa gat tgg caa ttg gtt gtt agg gat att tat gct ttt tat	10539
Gln Glu Asp Trp Gln Leu Val Val Arg Asp Ile Tyr Ala Phe Tyr	
3500 3505 3510	
cca ctc ctc ata aaa tac gtg gat cct cag cgc aat cac tgg cta	10584
Pro Leu Leu Ile Lys Tyr Val Asp Pro Gln Arg Asn His Trp Leu	
3515 3520 3525	
cgt aat aac ata tca aat gct gaa gat tta tac aat cat gtc tct	10629
Arg Asn Asn Ile Ser Asn Ala Glu Asp Leu Tyr Asn His Val Ser	
3530 3535 3540	
gaa ata ttt aac att tgg tcc aaa tcg caa tac ttt tta cgt gaa	10674
Glu Ile Phe Asn Ile Trp Ser Lys Ser Gln Tyr Phe Leu Arg Glu	
3545 3550 3555	
gaa caa aac ttt ata tct gca aat gaa att gat aac atg ata ctt	10719
Glu Gln Asn Phe Ile Ser Ala Asn Glu Ile Asp Asn Met Ile Leu	
3560 3565 3570	
att atg cca acg gca act cgg aga tcg gct gtt ata tca gaa act	10764
Ile Met Pro Thr Ala Thr Arg Arg Ser Ala Val Ile Ser Glu Thr	
3575 3580 3585	
tcg tta gga ggg tca tct gga aag aaa aag aaa aaa cac agg gat	10809
Ser Leu Gly Gly Ser Ser Gly Lys Lys Lys Lys Lys His Arg Asp	
3590 3595 3600	

aaa	aaa	cgt	gac	aaa	gaa	aaa	gaa	att	caa	gct	tca	ttg	atg	gtg	10854
Lys	Lys	Arg	Asp	Lys	Glu	Lys	Glu	Ile	Gln	Ala	Ser	Leu	Met	Val	
3605						3610					3615				
gct	tgt	ctt	aaa	cga	tta	ctg	cca	ggt	ggg	tta	aat	ttg	ttc	gcg	10899
Ala	Cys	Leu	Lys	Arg	Leu	Leu	Pro	Val	Gly	Leu	Asn	Leu	Phe	Ala	
3620						3625					3630				
gga	aga	gaa	caa	gaa	tta	gtt	caa	cat	tgc	aag	gat	aga	ttc	tta	10944
Gly	Arg	Glu	Gln	Glu	Leu	Val	Gln	His	Cys	Lys	Asp	Arg	Phe	Leu	
3635						3640					3645				
aaa	aaa	atg	cca	gat	tat	gat	gtg	ata	caa	ttt	gtc	aaa	att	caa	10989
Lys	Lys	Met	Pro	Asp	Tyr	Asp	Val	Ile	Gln	Phe	Val	Lys	Ile	Gln	
3650						3655					3660				
ttg	aca	tta	ccc	gat	aaa	tta	gac	cca	gct	gac	gaa	atg	tcc	tgg	11034
Leu	Thr	Leu	Pro	Asp	Lys	Leu	Asp	Pro	Ala	Asp	Glu	Met	Ser	Trp	
3665						3670					3675				
cag	cac	tat	tta	tac	tcc	aag	tta	gga	agc	aaa	aaa	gga	aat	act	11079
Gln	His	Tyr	Leu	Tyr	Ser	Lys	Leu	Gly	Ser	Lys	Lys	Gly	Asn	Thr	
3680						3685					3690				
gaa	att	aaa	cca	caa	caa	gtc	gac	gag	gta	gcg	gat	aga	att	gtc	11124
Glu	Ile	Lys	Pro	Gln	Gln	Val	Asp	Glu	Val	Ala	Asp	Arg	Ile	Val	
3695						3700					3705				
gct	atg	gct	aaa	gtt	ctt	tat	gga	ttg	cat	atg	att	gat	cat	cct	11169
Ala	Met	Ala	Lys	Val	Leu	Tyr	Gly	Leu	His	Met	Ile	Asp	His	Pro	
3710						3715					3720				
cag	ctt	caa	agc	aag	gcg	act	tat	cga	tct	ggt	gta	tcg	acg	caa	11214
Gln	Leu	Gln	Ser	Lys	Ala	Thr	Tyr	Arg	Ser	Val	Val	Ser	Thr	Gln	
3725						3730					3735				
cgt	aag	aga	gcc	gta	att	gct	tgt	ttc	cga	caa	ctc	tca	ctc	cac	11259
Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Leu	Ser	Leu	His	
3740						3745					3750				
gct	ttg	acc	aga	cac	cgt	gca	gta	aat	ata	ttc	ggt	cgt	tcg	ttt	11304
Ala	Leu	Thr	Arg	His	Arg	Ala	Val	Asn	Ile	Phe	Val	Arg	Ser	Phe	
3755						3760					3765				
tac	gaa	ctt	tgg	ctt	caa	gat	gaa	aat	att	gga	caa	gaa	gtt	atg	11349
Tyr	Glu	Leu	Trp	Leu	Gln	Asp	Glu	Asn	Ile	Gly	Gln	Glu	Val	Met	
3770						3775					3780				
att	gaa	gat	ctc	aca	caa	tca	ttt	gaa	gaa	gcg	gaa	ctt	aaa	aaa	11394
Ile	Glu	Asp	Leu	Thr	Gln	Ser	Phe	Glu	Glu	Ala	Glu	Leu	Lys	Lys	
3785						3790					3795				
cgt	gac	aag	gaa	gaa	gaa	gaa	gga	atg	gca	gac	cca	tta	aat	caa	11439
Arg	Asp	Lys	Glu	Glu	Glu	Glu	Gly	Met	Ala	Asp	Pro	Leu	Asn	Gln	
3800						3805					3810				
atg	gtt	aca	act	ttc	tgc	cga	gga	gcc	atg	act	gaa	aga	agt	ggg	11484
Met	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu	Arg	Ser	Gly	
3815						3820					3825				
gct	tta	caa	gag	gac	cct	ctt	tac	atg	tct	tat	gct	gat	att	ttg	11529
Ala	Leu	Gln	Glu	Asp	Pro	Leu	Tyr	Met	Ser	Tyr	Ala	Asp	Ile	Leu	
3830						3835					3840				
gct	aag	tcc	tgc	ggc	gaa	gaa	gaa	gaa	gaa	ggg	aat	aac	gaa	gaa	11574
Ala	Lys	Ser	Cys	Gly	Glu	Glu	Glu	Glu	Glu	Gly	Asn	Asn	Glu	Glu	
3845						3850					3855				
gaa	ggg	tca	aat	ggg	aac	gga	gat	gaa	gaa	ggc	ggg	gct	tct	atc	11619
Glu	Gly	Ser	Asn	Gly	Asn	Gly	Asp	Glu	Glu	Gly	Gly	Ala	Ser	Ile	
3860						3865					3870				
cat	gag	caa	gaa	atg	gaa	aaa	caa	aag	ctt	ttg	ttt	cac	caa	gct	11664
His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His	Gln	Ala	
3875						3880					3885				
cga	ttg	gct	aac	cgt	ggg	gtc	gca	gaa	atg	gtt	tta	tta	cac	ata	11709
Arg	Leu	Ala	Asn	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	Leu	His	Ile	
3890						3895					3900				

tca gct tgc aaa ggt ata ccc agt gaa atg gtt atg aaa acg ctt	11754
Ser Ala Cys Lys Gly Ile Pro Ser Glu Met Val Met Lys Thr Leu	
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Gly Ser Glu Gly Ala Ala Gly Glu Lys Asn Met His Asp Ala Glu	
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Ile	Asn	Tyr	Phe	Ala	Gln	Pro	Glu	Glu	Asp	Met	Glu	His	Glu	Glu	Lys
	450					455					460				
Gln	Asn	Arg	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu
465				470						475				480	
Glu	Gly	Ile	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Val	Asn	Ile
			485					490						495	
Ile	Thr	Ser	Gln	Gly	Phe	Met	Val	Ser	Leu	Ala	Gly	Asp	Glu	Ser	Gly
		500						505					510		
Gln	Ser	Trp	Asp	Val	Ile	Ser	Gly	Tyr	Leu	Tyr	Gln	Leu	Leu	Ala	Ala
	515						520					525			
Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	Gln	Phe	Ala	Asn	Thr	Asn
	530					535					540				
Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	Ser	Ser	Glu
545				550						555					560
Gly	Thr	Gly	Met	Leu	Asp	Val	Leu	His	Cys	Val	Leu	Ile	Asp	Ser	Pro
			565						570					575	
Glu	Ala	Leu	Asn	Met	Met	Lys	Asp	Glu	His	Ile	Lys	Val	Ile	Ile	Ser
			580					585					590		
Leu	Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys	Val	Leu	Asp	Val	Leu	Cys
	595						600					605			
Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	Arg	Ser	Ser	Gln	Asn	Asn
	610					615					620				
Ile	Cys	Asp	Phe	Leu	Leu	Pro	Gly	Lys	Asn	Leu	Leu	Gln	Thr	Leu	
625				630						635				640	
Leu	Val	Asp	His	Val	Ala	Ser	Val	Arg	Pro	Asn	Ile	Phe	Val	Gly	His
			645						650					655	
Val	Ser	Gly	Ser	Ala	Val	Tyr	Arg	Lys	Trp	Tyr	Tyr	Glu	Val	Ala	Ile
		660						665					670		
Asp	His	Val	Glu	Gln	Thr	Thr	His	Leu	Asn	Pro	His	Ile	Arg	Ile	Gly
	675						680					685			
Trp	Ala	Asn	Thr	Ala	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Glu	Lys
	690					695					700				
Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	Tyr	Ser	Phe	Gly	Phe	Asp
705				710					715					720	
Gly	Ser	Tyr	Leu	Trp	Thr	Gly	Gly	Arg	Lys	Ser	Glu	Val	Met	Pro	Gly
			725						730					735	
Ser	Glu	Ile	Ser	Asn	Ile	Lys	Lys	Gly	Asp	Val	Ile	Gly	Cys	Ala	Leu
		740						745					750		
Asp	Leu	Thr	Ile	Pro	Ile	Ile	Thr	Phe	Thr	Leu	Asn	Gly	Gln	Leu	Val
	755						760					765			
Gln	Gly	Ala	Phe	Arg	Asp	Phe	Asn	Leu	Asp	Gly	Met	Phe	Phe	Pro	Val
	770					775					780				
Ile	Ser	Cys	Ser	Ser	Lys	Val	Gly	Cys	Arg	Phe	Leu	Leu	Gly	Gly	Asp
785					790					795				800	
His	Gly	Arg	Leu	Lys	Phe	Thr	Pro	Pro	Asp	Glu	Phe	Ser	Pro	Leu	Phe
			805						810					815	
Glu	Ser	Leu	Leu	Pro	Gln	Gln	Ile	Leu	Thr	Ile	Asp	Pro	Cys	Phe	Tyr
			820					825					830		
Phe	Gly	Asn	Leu	Ser	Lys	Cys	Val	Leu	Thr	Gly	Pro	Trp	Tyr	Val	Glu
		835					840					845			
Asp	Asp	Thr	Ala	Phe	Val	Pro	Asn	Pro	Val	Asp	Thr	Ser	Met	Val	Thr
	850					855					860				
Leu	Pro	Ser	Tyr	Ile	Glu	Asn	Ile	Lys	Asp	Lys	Leu	Ala	Glu	Asn	Ile
865					870					875				880	

His Glu Met Trp Ala Met Asn Lys Ile Glu Ala Gly Trp Gln Tyr Gly  
 885 890 895  
 Asp Lys Arg Asn Asp Thr Arg Lys Tyr His Pro Cys Leu Ile Gln Phe  
 900 905 910  
 Asp Lys Leu Pro Pro Ala Glu Lys Arg Tyr Asp Ser Gln Leu Ala Val  
 915 920 925  
 Gln Thr Leu Lys Thr Val Ile Ala Leu Gly Tyr His Ile Ser Ile Asp  
 930 935 940  
 Asn Pro Pro Ser Arg Ile Lys Thr Val Arg Leu Pro Asn Glu Pro Phe  
 945 950 955 960  
 Met Gln Ser Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser Ala Ile  
 965 970 975  
 Asn Leu Ser Gly Lys Met Glu Glu Leu Ile Asp Gln Leu Ala Glu Asn  
 980 985 990  
 Thr His Asn Leu Trp Ala Lys Glu Arg Ile Gln Gln Gly Trp Thr Tyr  
 995 1000 1005  
 Gly Leu Asn Glu Glu Leu Gln Met Leu Arg Ser Pro His Leu Val  
 1010 1015 1020  
 Pro Tyr Ser Lys Val Asp Asp Ala Ile Lys Lys Ala Asn Arg Asp  
 1025 1030 1035  
 Thr Ala Ser Glu Thr Val Arg Thr Leu Leu Val Tyr Gly Tyr Asn  
 1040 1045 1050  
 Leu Asp Pro Pro Thr Gly Glu Thr Asn Glu Ala Thr Leu Leu Thr  
 1055 1060 1065  
 Asp Glu Asn Thr Asn Arg Tyr Leu Thr Phe Arg Thr Tyr Arg Ala  
 1070 1075 1080  
 Glu Lys Thr Tyr Ala Val Ala Ser Gly Lys Trp Tyr Phe Glu Phe  
 1085 1090 1095  
 Glu Ile Leu Thr Asn Gly Pro Met Arg Val Gly Trp Ala Arg Phe  
 1100 1105 1110  
 Thr Cys Ser Pro Gly Tyr Gln Ile Gly Ser Asp Glu Asn Ser Trp  
 1115 1120 1125  
 Ala Phe Asp Gly Tyr Asn Glu Glu Lys Ile Tyr Met Gly Thr Ala  
 1130 1135 1140  
 Glu Ser Phe Gly Arg Gln Trp Gln Val Gly Asp Val Val Gly Val  
 1145 1150 1155  
 Phe Leu Asp Leu Met Asp His Thr Ile Ser Phe Ser Leu Asn Gly  
 1160 1165 1170  
 Glu Leu Leu Met Asp Thr Leu Gly Gly Glu Thr Thr Phe Ser Glu  
 1175 1180 1185  
 Val Gln Gly Glu Gly Phe Val Pro Ala Phe Thr Leu Gly Leu Gly  
 1190 1195 1200  
 Gln Lys Ala Lys Leu Thr Phe Gly Gln Asp Val Asn Ser Leu Lys  
 1205 1210 1215  
 Tyr Phe Thr Thr Cys Gly Leu Gln Glu Gly Tyr Glu Pro Phe Cys  
 1220 1225 1230  
 Val Asn Met Lys Arg Pro Val Thr Tyr Trp Tyr Thr Lys Asp Gln  
 1235 1240 1245  
 Pro Ile Phe Glu Asn Thr Asp Asp Phe Ser Ser Val Ile Asp Val  
 1250 1255 1260  
 Thr Arg Ile Pro Ala Gly Ser Asp Thr Pro Pro Cys Leu Lys Ile  
 1265 1270 1275  
 Ser His Asn Thr Phe Glu Thr Met Glu Arg Ala Asn Trp Glu Phe  
 1280 1285 1290  
 Leu Arg Leu Ser Leu Pro Val Ile Cys Leu Pro Asn Phe Ile Asp  
 1295 1300 1305  
 Glu Gln Glu Lys Gln Arg Arg Trp Gln Glu Ile Arg Ile Arg Gln  
 1310 1315 1320  
 His Arg Leu Leu Ser Gln Ser Glu His Ala Thr Pro Ala His Ile  
 1325 1330 1335

Glu	Gln	Ile	Met	Lys	Ser	Gly	Phe	Ser	Met	Ser	Asp	Ile	Lys	Gly
1340						1345					1350			
Leu	His	Arg	Gly	Tyr	Ser	Asp	Asp	Pro	Val	Glu	Asn	Asp	Glu	Met
1355						1360					1365			
Met	Pro	Asn	Thr	Ala	Pro	Leu	Pro	Pro	Arg	Gly	Lys	Asn	Gln	Pro
1370						1375					1380			
Pro	Pro	Pro	Arg	Pro	Pro	Arg	Lys	Gly	Ser	Leu	Ser	Arg	His	Asp
1385						1390					1395			
Asp	Leu	Thr	Ile	Glu	Asn	Asp	Gly	Lys	Leu	Asn	Arg	Ser	Ser	Ser
1400						1405					1410			
Glu	Leu	Asn	Phe	Asn	Ile	Tyr	Asn	Gln	Gln	Asn	Gly	Asn	Gly	Gln
1415						1420					1425			
Asp	Ile	Asn	Lys	Asp	Asp	Lys	Lys	Lys	Arg	Gly	Arg	Ser	Pro	Phe
1430						1435					1440			
Arg	Phe	Phe	Ser	Arg	Lys	Lys	Glu	Gly	Pro	Ser	Asp	Asn	Pro	Lys
1445						1450					1455			
Arg	Ala	Lys	Thr	Pro	Asp	Pro	Ala	Arg	Asn	Val	Val	Arg	Ser	Arg
1460						1465					1470			
Asn	Ala	Ala	His	Arg	Pro	Asn	Thr	Leu	Asn	Glu	Arg	Ile	Thr	Pro
1475						1480					1485			
Gln	Ile	Arg	Val	Ser	Gln	Met	Asp	Leu	Lys	Leu	Val	Pro	Pro	Ala
1490						1495					1500			
Ile	Pro	Asp	Arg	Pro	Gly	Gly	Pro	Lys	Ala	Met	Ser	Phe	Thr	Pro
1505						1510					1515			
Ser	Ser	Ala	Gly	Ile	Glu	Phe	Val	Gly	Asn	Glu	Ile	Phe	Asp	Leu
1520						1525					1530			
Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu	Tyr	Tyr	Tyr	Gly	Val	Arg	Ile
1535						1540					1545			
Phe	Pro	Gly	Gln	Asp	Pro	Thr	His	Val	Tyr	Val	Gly	Trp	Val	Thr
1550						1555					1560			
Thr	Gln	Phe	His	Leu	His	Ser	Lys	Asp	Phe	Ser	Gln	Asn	His	Val
1565						1570					1575			
Arg	Lys	Ser	Thr	Val	Thr	Ile	Val	Asp	Glu	His	Asn	Arg	Ile	Leu
1580						1585					1590			
Glu	Ser	Ile	Asp	Arg	Gln	Ser	Cys	Tyr	Met	Val	Arg	Ser	Asp	Glu
1595						1600					1605			
Leu	Tyr	Asn	Glu	Val	Thr	Asn	Asp	Ser	Ser	Gly	Lys	Gly	Ala	Ser
1610						1615					1620			
Gln	Gly	Met	Ala	Ile	Gly	Cys	Phe	Ile	Asp	Ile	Ala	Thr	Gly	Val
1625						1630					1635			
Met	Ser	Phe	Thr	Cys	Glu	Gly	Lys	Glu	Thr	Ser	Phe	Lys	Phe	Lys
1640						1645					1650			
Met	Glu	Pro	Asp	Ile	Lys	Leu	Phe	Pro	Ala	Ile	Phe	Val	Glu	Ala
1655						1660					1665			
Ser	Ser	Lys	Glu	Ile	Leu	Gln	Ile	Glu	Leu	Gly	Arg	Thr	Ser	Thr
1670						1675					1680			
Thr	Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Gln	Asn	Ser	Glu	Arg	His
1685						1690					1695			
Val	Leu	Pro	Gln	Phe	Pro	Pro	Arg	Leu	Lys	Val	Gln	Cys	Leu	Arg
1700						1705					1710			
Pro	His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Asp	Ser	Leu	His	Ile	His
1715						1720					1725			
Thr	Leu	Lys	Leu	Ser	Asp	Ile	Arg	Gly	Trp	Ser	Ile	Leu	Cys	Glu
1730						1735					1740			
Asp	Pro	Val	Ser	Met	Ile	Ala	Leu	His	Ile	Pro	Glu	Glu	Asp	Arg
1745						1750					1755			
Cys	Ile	Asp	Ile	Leu	Glu	Leu	Ile	Glu	Met	Glu	Lys	Leu	Leu	Ser
1760						1765					1770			
Phe	His	Ala	His	Thr	Leu	Thr	Leu	Tyr	Ala	Ala	Val	Cys	Tyr	Gln
1775						1780					1785			

Ala	Asn	Tyr	Arg	Ala	Ala	His	Ile	Leu	Cys	Thr	His	Val	Asn	Gln
1790						1795					1800			
Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Cys	Ser	Glu	Tyr	Met	Ser	Gly	Pro
1805						1810					1815			
Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Ile	Ala	Leu	His	Leu	Glu
1820						1825					1830			
Ser	His	Ala	Thr	Thr	Met	Glu	Val	Cys	Lys	Asn	Glu	Tyr	Ile	Ile
1835						1840					1845			
Pro	Leu	Gly	His	Glu	Leu	Thr	Ala	Leu	Tyr	Asp	Asp	Pro	Gln	Met
1850						1855					1860			
Gly	His	Ser	Leu	Arg	Ser	Leu	Gln	Thr	Glu	Ser	Val	Arg	Pro	Gln
1865						1870					1875			
Met	Lys	Met	Thr	Glu	Ile	Ser	Asp	Val	Ile	Asp	Asn	Val	Arg	Asn
1880						1885					1890			
Leu	Tyr	Ser	Pro	Tyr	Phe	Pro	Leu	Gln	Val	Val	Arg	Glu	Tyr	Val
1895						1900					1905			
Met	Ala	Ala	Leu	Glu	Glu	Ala	Val	Leu	Val	Asn	Gln	Val	His	Asn
1910						1915					1920			
Arg	Asp	Pro	Ile	Gly	Gly	Ser	Asn	Glu	Asn	Leu	Phe	Leu	Pro	Leu
1925						1930					1935			
Leu	Lys	Leu	Val	Asp	Arg	Leu	Leu	Leu	Val	Gly	Met	Leu	Arg	Asp
1940						1945					1950			
Glu	Asp	Val	Glu	Lys	Leu	Leu	Ile	Met	Ile	Asn	Pro	Glu	Thr	Trp
1955						1960					1965			
Asp	Pro	Glu	Phe	Gln	Lys	Asp	Gly	Pro	Asp	Glu	His	Arg	Lys	Gly
1970						1975					1980			
Leu	Leu	His	Met	Lys	Met	Ala	Glu	Gly	Ala	Lys	Leu	Gln	Met	Cys
1985						1990					1995			
Tyr	Leu	Leu	His	His	Leu	Cys	Asp	Ile	Gln	Leu	Arg	His	Arg	Val
2000						2005					2010			
Glu	Ser	Ile	Ile	Ser	Phe	Ser	Tyr	Gln	Phe	Val	Asn	Asp	Ile	Gln
2015						2020					2025			
Ile	Asp	Gln	Leu	Arg	Arg	Tyr	Asn	Glu	Ile	Lys	Gln	Ser	Asp	Leu
2030						2035					2040			
Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Arg	Glu	Phe	Arg	Cys	Pro
2045						2050					2055			
Pro	Arg	Glu	Gln	Met	Asn	Ala	Ile	Leu	Gly	Phe	Lys	Asn	Leu	Asp
2060						2065					2070			
Ser	Asp	Asp	Lys	Glu	Asn	Cys	Leu	Ile	Gly	Asp	Glu	Leu	Arg	Glu
2075						2080					2085			
Arg	Met	Asn	Glu	Phe	Asn	Glu	Lys	Leu	Met	Lys	Gln	Ile	Leu	Leu
2090						2095					2100			
Val	Ala	Leu	Gln	Glu	Ser	Glu	Asp	Asp	Lys	Leu	Asp	Leu	Asn	Asn
2105						2110					2115			
Ile	Asn	Arg	Glu	Gly	Lys	Ile	Lys	Gln	Phe	Tyr	Asn	Phe	Ile	Asn
2120						2125					2130			
Ala	Val	Lys	Asp	Glu	Ala	Asn	Glu	Asn	Gly	Leu	Asn	Glu	His	Glu
2135						2140					2145			
Lys	Lys	Ile	Pro	Glu	Glu	Ile	Phe	Arg	Lys	Val	Leu	Ile	Thr	Thr
2150						2155					2160			
Ile	Val	Ser	Trp	Ala	Glu	Glu	Thr	Gln	Ile	Glu	Thr	Pro	Lys	Leu
2165						2170					2175			
Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Val	Arg	Gln	Tyr	Asp	Ser	Val
2180						2185					2190			
Gly	Glu	Leu	Ile	Arg	Ala	Leu	Glu	Lys	Thr	Tyr	Val	Ile	Asn	Phe
2195						2200					2205			
Lys	Thr	Lys	Glu	Asp	Val	Ala	Gln	Met	Trp	Val	Gly	Leu	Ser	Gln
2210						2215					2220			
Ile	Arg	Ser	Leu	Leu	Pro	Val	Gln	Met	Ser	Gln	Glu	Glu	Glu	Glu
2225						2230					2235			

Leu Met	Arg Glu Arg Leu	Trp	Lys Leu Val Asn	Asn	His Thr Phe
2240		2245		2250	
Phe Gln	His Pro Asp Leu	Ile	Arg Val Leu Arg	Met	His Glu Asn
2255		2260		2265	
Val Met	Ala Val Met Met	Asn	Thr Leu Gly Arg	Arg	Ala Gln Ala
2270		2275		2280	
Gln Ser	Gln Pro Gly Gly	Thr	Thr Val Thr Gly	Gln	Asp Gly Glu
2285		2290		2295	
Ile Val	Pro Lys Glu Lys	Asp	Thr Ser His Glu	Met	Val Val Ala
2300		2305		2310	
Cys Cys	Arg Phe Leu Cys	Tyr	Phe Cys Arg Thr	Ser	Arg Gln Asn
2315		2320		2325	
Gln Lys	Ala Met Phe Asp	His	Phe Ser Phe Leu	Leu	Glu Asn Ser
2330		2335		2340	
Asn Ile	Leu Leu Ser Arg	Pro	Ser Leu Arg Gly	Ser	Thr Pro Leu
2345		2350		2355	
Asp Val	Ala Tyr Ser Ser	Leu	Met Glu Asn Thr	Glu	Leu Ala Leu
2360		2365		2370	
Ala Leu	Arg Glu His Tyr	Leu	Glu Lys Ile Ala	Ile	Tyr Leu Ser
2375		2380		2385	
Arg Cys	Gly Leu Gln Ser	Asn	Ser Glu Leu Ile	Glu	Lys Gly Tyr
2390		2395		2400	
Pro Asp	Leu Gly Trp Asp	Pro	Val Glu Gly Glu	Arg	Tyr Leu Asp
2405		2410		2415	
Phe Leu	Arg Phe Cys Val	Trp	Val Asn Gly Glu	Ser	Val Glu Glu
2420		2425		2430	
Asn Ala	Asn Leu Val Ile	Arg	Leu Leu Ile Arg	Arg	Pro Glu Cys
2435		2440		2445	
Leu Gly	Pro Ala Leu Arg	Gly	Glu Gly Glu Gly	Leu	Leu Arg Ala
2450		2455		2460	
Ile Ile	Asp Ala Asn Lys	Met	Ser Glu Arg Ile	Ala	Glu Arg Arg
2465		2470		2475	
Lys Phe	Leu Glu Glu Ser	Gly	Asn Gln Glu Asn	Ile	Gln Leu Asp
2480		2485		2490	
His Pro	Leu Pro Glu Ser	Glu	Asp Asp Glu Asp	Tyr	Ile Asp Thr
2495		2500		2505	
Gly Ala	Ala Ile Leu Asn	Phe	Tyr Cys Thr Leu	Val	Asp Leu Leu
2510		2515		2520	
Gly Arg	Cys Ala Pro Asp	Ser	Ser Val Ile Ala	Leu	Gly Lys Asn
2525		2530		2535	
Glu Ser	Leu Arg Ala Arg	Ala	Ile Leu Arg Ser	Leu	Val Pro Leu
2540		2545		2550	
Glu Asp	Leu His Gly Val	Leu	Ser Leu Arg Phe	Thr	Leu Gln Asn
2555		2560		2565	
Pro Ala	Ala Gly Gln Asp	Arg	Pro Lys Ser Asp	Met	Pro Ser Gly
2570		2575		2580	
Leu Ile	Pro Gly His Lys	Gln	Ser Val Val Leu	Phe	Leu Glu Arg
2585		2590		2595	
Val Tyr	Gly Ile Glu Met	Gln	Glu Leu Phe Phe	Thr	Leu Leu Glu
2600		2605		2610	
Glu Ala	Phe Leu Pro Asp	Leu	Arg Thr Ala Thr	Met	Leu Asp Arg
2615		2620		2625	
Asn Asp	Gly Leu Glu Ser	Asp	Met Ala Leu Ala	Met	Asn Arg Tyr
2630		2635		2640	
Ile Gly	Asn Ser Val Leu	Pro	Leu Leu Ile Gly	His	Ser Lys Phe
2645		2650		2655	
Tyr Ser	Glu Ser Asp Asn	Tyr	Ala Asn Leu Leu	Asp	Ala Thr Leu
2660		2665		2670	
His Thr	Val Tyr Arg Leu	Ser	Lys Asn Arg Met	Leu	Thr Lys Gly
2675		2680		2685	



Gln Arg	Glu Ala Val Ser Asp	Phe Leu Val Ala Leu	Thr Ser Gln
2690	2695	2700	
Met Gln	Pro Ser Met Leu Leu	Lys Leu Leu Arg Lys	Leu Thr Val
2705	2710	2715	
Asp Val	Ser Asn Leu Ser Glu	Tyr Thr Thr Val Ala	Leu Arg Leu
2720	2725	2730	
Leu Thr	Leu His Tyr Asp Arg	Cys Ala Lys Tyr Tyr	Gly Ser Thr
2735	2740	2745	
Gly Gly	Gln Gly Ile Tyr Gly	Ala Ser Ser Asp Glu	Glu Lys Arg
2750	2755	2760	
Leu Thr	Met Met Leu Phe Ser	Asn Ile Phe Asp Ser	Leu Ser Lys
2765	2770	2775	
Met Asp	Tyr Asp Pro Glu Leu	Phe Gly Lys Ala Leu	Pro Cys Leu
2780	2785	2790	
Ser Ala	Ile Gly Cys Ala Leu	Pro Pro Asp Tyr Ser	Leu Ser Lys
2795	2800	2805	
Asn Tyr	Asp Asp Glu Trp Tyr	Gly Ser Lys Gln Asn	Ile Gln Gly
2810	2815	2820	
Pro Ser	Asp Gly Pro Tyr Asn	Pro Gln Pro Ile Asn	Thr Asn Ser
2825	2830	2835	
Ile Val	Leu Asp Asn Asp Leu	Asn Ser Ile Val His	Lys Phe Ser
2840	2845	2850	
Glu His	Tyr His Asp Ala Trp	Ala Asn Arg Lys Leu	Glu Asn Gly
2855	2860	2865	
Trp Val	Tyr Gly Glu Gln Phe	Asn Asp Val Asn Lys	Ser His Pro
2870	2875	2880	
Arg Leu	Lys Pro Tyr Met Met	Leu Ser Glu Tyr Glu	Lys Glu Leu
2885	2890	2895	
Tyr Lys	Glu Pro Val Arg Glu	Ser Leu Lys Ala Leu	Leu Ala Ile
2900	2905	2910	
Gly Trp	Ser Ile Glu His Ser	Glu Asn Asp Ala Pro	Leu Asn Asn
2915	2920	2925	
Arg Gly	Ser Val Arg Arg Gln	Ser Lys Ser Asn Glu	Asn Val Thr
2930	2935	2940	
Pro Phe	Asp Tyr His Pro Asn	Pro Ile Asp Met Thr	Asn Leu Thr
2945	2950	2955	
Leu Thr	Arg Glu Met Gln Asn	Met Ala Glu Arg Leu	Ala Glu Asn
2960	2965	2970	
Ser His	Asp Ile Trp Ala Lys	Lys Lys Lys Glu Glu	Val Met Leu
2975	2980	2985	
Cys Gly	Gly Gly Ile His Asn	Gln Leu Val Pro Tyr	Asp Leu Leu
2990	2995	3000	
Thr Asp	Lys Glu Lys Lys Lys	Asp Arg Glu Arg Ser	Gln Glu Phe
3005	3010	3015	
Leu Lys	Tyr Leu Gln Tyr Gln	Gly Tyr Lys Leu His	Arg Pro Asn
3020	3025	3030	
Arg Asn	Gly Gly Pro Ser Asp	Ala Glu Gln Leu Ala	Ala Ala Ser
3035	3040	3045	
Thr Gly	Glu Leu Arg Phe Ser	Tyr Ser Leu Leu Glu	Lys Leu Ile
3050	3055	3060	
His Tyr	Ile Asp Arg Ala Ser	Ile Asn Met Thr Leu	Leu Lys Pro
3065	3070	3075	
Ser Gly	Thr Phe Ser Arg Arg	Ser Ser Phe Lys Ile	Cys Thr Arg
3080	3085	3090	
Asp Ile	Lys Phe Phe Ser Lys	Val Val Leu Pro Leu	Val Glu Lys
3095	3100	3105	
Tyr Phe	Ser Thr His Arg Asn	Tyr Phe Ile Thr Val	Ala Thr Ala
3110	3115	3120	
Ser Ser	Val Leu Gly Ala Ala	Ser Leu Lys Glu Lys	Glu Met Val
3125	3130	3135	

Ala Ser	Leu Phe Cys Lys	Leu	Ala Asn Leu Leu	Arg	Ser Lys Leu
3140		3145		3150	
Met Ala	Phe Gly Ala Asp	Val	Arg Ile Thr Val	Arg	Cys Leu Gln
3155		3160		3165	
Val Leu	Val Lys Ala Ile	Asp	Ala Lys Ser Leu	Val	Lys Asn Cys
3170		3175		3180	
Pro Glu	Phe Ile Arg Thr	Ser	Met Leu Thr Phe	Phe	His Asn Ile
3185		3190		3195	
Ala Asp	Asp Leu Glu His	Thr	Ile Gln Asn Leu	His	Asp Ser Arg
3200		3205		3210	
Tyr Cys	Tyr Leu Arg Gly	Thr	His Leu Lys Thr	Ser	Thr Ser Leu
3215		3220		3225	
Phe Tyr	Val Asn Asp Val	Ile	Leu Pro Val Leu	Ser	Ser Leu Phe
3230		3235		3240	
Asp His	Leu Ala Ala Tyr	Glu	Tyr Gly Asn Glu	Leu	Leu Leu Asn
3245		3250		3255	
Glu Ile	Gln Val Ala Ala	Tyr	Lys Met Leu Ser	Ser	Leu Tyr Thr
3260		3265		3270	
Leu Gly	Thr Asp Thr Ser	Leu	Thr His Asp Arg	Lys	Tyr Leu Lys
3275		3280		3285	
Val Gln	Leu Glu Arg His	Arg	Pro Ala Phe Gly	Ser	Cys Leu Gly
3290		3295		3300	
Ala Phe	Ser Ser Thr Phe	Pro	Val Ala Phe Leu	Glu	Pro His Leu
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Asn Lys	His Asn Gln Tyr	Ser	Leu Leu Asn Arg	Phe	Ala Asp Ser
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Pro Thr	Leu Glu Thr Val	Leu	Asn Glu Val Asp	Gln	Phe Val Glu
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Ser Glu	Lys Thr Tyr Ala	Asp	Ala Pro His Ile	Ile	Asp Val Ile
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Leu Pro	Leu Leu Cys Ser	Tyr	Leu Pro Tyr Trp	Trp	Ala Gln Gly
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Pro Asp	Asn Val Ala Leu	Thr	Thr Gly Asn His	Val	Thr Met Val
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Arg Thr	Glu Thr Leu Tyr	His	Lys Glu Glu Ser	Leu	Arg Gly Phe
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Gln Glu	Asp Trp Gln Leu	Val	Val Arg Asp Ile	Tyr	Ala Phe Tyr
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 Thr Gly Glu Arg Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His  
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 Cys Phe Leu Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser  
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Glu	Asp	Leu	Ile	Asn	Tyr	Phe	Ala	Gln	Pro	Ala	Asp	Asp	Met	Glu	His	
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gaa	gaa	aaa	caa	aat	agg	ttc	cgt	gca	ttg	aga	aat	cgt	caa	gat	ctg	1444
Glu	Glu	Lys	Gln	Asn	Arg	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	
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Phe	Gln	Glu	Glu	Gly	Ile	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	
			480					485						490		
ata	aat	gtg	ata	acg	tct	caa	gga	ttc	ctt	gta	agt	tta	gca	gga	gat	1540
Ile	Asn	Val	Ile	Thr	Ser	Gln	Gly	Phe	Leu	Val	Ser	Leu	Ala	Gly	Asp	
		495					500					505				
gaa	tca	gga	caa	agc	tgg	gat	ata	att	tct	ggt	tac	ctg	tat	caa	ctt	1588
Glu	Ser	Gly	Gln	Ser	Trp	Asp	Ile	Ile	Ser	Gly	Tyr	Leu	Tyr	Gln	Leu	
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Leu	Ala	Ala	Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	Gln	Phe	Ala	
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Asn	Ser	Asn	Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	
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Ser	Ser	Glu	Thr	Gly	Met	Leu	Asp	Val	Leu	His	Cys	Val	Leu	Ile		
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gat	tgc	cct	gaa	gcg	ttg	aat	atg	atg	agg	gat	gag	cat	ata	aaa	gtt	1780
Asp	Ser	Pro	Glu	Ala	Leu	Asn	Met	Met	Arg	Asp	Glu	His	Ile	Lys	Val	
		575					580					585				
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Ile	Ile	Ser	Leu	Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys	Val	Leu	Asp	
		590				595					600					
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Val	Leu	Cys	Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	Arg	Ser	Ser	
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Gln	Asn	Asn	Ile	Cys	Asp	Phe	Leu	Leu	Pro	Gly	Lys	Asn	Leu	Leu	Pro	
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Gln	Thr	Gln	Leu	Val	Asp	His	Val	Ala	Ser	Val	Arg	Pro	Asn	Ile	Phe	
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1130						1135					1140			
Phe	Gly	Arg	Gln	Trp	Gln	Val	Gly	Asp	Val	Val	Gly	Val	Phe	Leu
1145						1150					1155			
Asp	Leu	Leu	Asp	His	Thr	Met	Ser	Phe	Ser	Leu	Asn	Gly	Glu	Leu
1160						1165					1170			
Leu	Met	Asp	Ala	Leu	Gly	Gly	Glu	Thr	Ser	Phe	Ala	Asp	Val	Gln
1175						1180					1185			
Gly	Glu	Ser	Phe	Val	Pro	Ala	Phe	Thr	Leu	Gly	Val	Gly	Gln	Lys
1190						1195					1200			
Ala	Lys	Leu	Thr	Phe	Gly	Gln	Asp	Val	Thr	Val	Leu	Lys	Phe	Phe
1205						1210					1215			
Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	Phe	Cys	Val	Asn
1220						1225					1230			
Met	Asn	Arg	Ala	Val	Thr	Tyr	Trp	Tyr	Thr	Lys	Asp	His	Pro	Ile
1235						1240					1245			
Phe	Glu	Asn	Thr	Glu	Asp	Tyr	Ala	Asp	Ser	Arg	Ile	Asp	Val	Thr
1250						1255					1260			
Arg	Ile	Pro	Ala	Gly	Ser	Asp	Thr	Pro	Pro	Cys	Leu	Lys	Ile	Ser
1265						1270					1275			
His	Asn	Leu	Phe	Glu	Ser	Met	Glu	Lys	Ala	Asn	Trp	Glu	Phe	Leu
1280						1285					1290			
Arg	Leu	Ser	Leu	Pro	Val	Ile	Cys	His	Ser	Ser	Phe	Ile	Glu	Glu
1295						1300					1305			
Ser	Glu	Lys	Leu	Lys	Arg	Trp	Gln	Glu	Ile	Arg	Ile	Arg	Gln	His

1310	1315	1320
Arg Leu Leu Val Glu Ala Asp	Gln Thr Thr Pro	Ala His Met Glu
1325	1330	1335
Gln Ile Met Lys Ser Gly Leu	Ser Met Ser Asp	Ile Lys Gly Leu
1340	1345	1350
His Arg Gly Tyr Ser Glu Asp	Ala Val Glu Ala	Asp Glu Met Met
1355	1360	1365
Met Gln Ser Thr Pro Thr Thr	Lys Ser Lys Met	Arg Gln Pro Ser
1370	1375	1380
Arg Pro Pro Arg Lys Gly Ser	Leu Ser Arg Asn	Glu Asp Met Pro
1385	1390	1395
Met Ile Asn Gly Ser Leu Glu	Gln Ser Lys Met	Asn Arg Ser Thr
1400	1405	1410
Ser Glu Leu Asp Leu Asn Arg	Tyr Asn Ala Asp	Leu Gln Asn Asp
1415	1420	1425
Lys Asp Asp Lys Lys Lys Arg	Gly Arg Ser Pro	Phe Arg Phe Phe
1430	1435	1440
Ser Arg Lys Arg Glu Ala Ser	Asn Glu Arg Ser	Lys Lys Ala Lys
1445	1450	1455
Ser Pro Glu Pro Asn Ser Met	Met Glu Ala Asp	Arg Gly Gln Met
1460	1465	1470
Gly Arg Ser Gln His His Met	Met Arg Thr Pro	Thr Val Lys Val
1475	1480	1485
Thr Ala Pro Asp Met Lys Val	Ile Pro Pro Thr	Ile Pro Glu Arg
1490	1495	1500
Ser Asn Met Pro Lys Gln Met	Thr Gly Ala Pro	Leu Ser Gly Ser
1505	1510	1515
Gly Ile Glu Ser Val Gly Asn	Glu Ile Phe Asp	Gly Glu Cys Leu
1520	1525	1530
Lys Leu Ile Asn Glu Tyr Phe	Tyr Gly Val Arg	Ile Phe Pro Gly
1535	1540	1545
Gln Asp Pro Thr His Val Tyr	Val Gly Trp Val	Thr Thr Gln Tyr
1550	1555	1560
His Phe Phe Ala Asn Glu Phe	Asn Gln Ser Lys	Val Arg Lys Val
1565	1570	1575
Thr Val His Thr Leu Asp Glu	Phe Ser Arg Val	Asn Glu Ser Val
1580	1585	1590
Asp Arg Gln Ser Cys Tyr Met	Val Arg Ser Asp	Glu Leu Phe Asn
1595	1600	1605
Glu Val Thr Asn Asp Ser Ser	Gly Lys Gly Ala	Ser Gln Gly Met

1610						1615						1620			
Phe	Ile	Gly	Cys	Phe	Val	Asp	Ala	Ala	Thr	Gly	Tyr	Ile	Ser	Phe	
1625						1630					1635				
Thr	Cys	Glu	Gly	Lys	Glu	Thr	Ser	His	Lys	Phe	Lys	Met	Glu	Pro	
1640						1645					1650				
Glu	Thr	Lys	Leu	Phe	Pro	Ala	Ile	Phe	Val	Glu	Ala	Thr	Ser	Lys	
1655						1660					1665				
Glu	Ile	Leu	Gln	Ile	Glu	Leu	Gly	Arg	Thr	Ser	Thr	Thr	Leu	Pro	
1670						1675					1680				
Leu	Ser	Ala	Ala	Val	Leu	Gln	Asn	Ser	Glu	Arg	His	Val	Asn	Pro	
1685						1690					1695				
Gln	Phe	Pro	Pro	Arg	Leu	Lys	Val	Gln	Cys	Leu	Lys	Pro	His	Gln	
1700						1705					1710				
Trp	Ala	Arg	Val	Pro	Asn	Val	Ser	Leu	Gln	Val	His	Ala	Leu	Lys	
1715						1720					1725				
Leu	Ser	Asp	Ile	Arg	Gly	Trp	Ser	Met	Leu	Cys	Glu	Asp	Pro	Met	
1730						1735					1740				
Ser	Met	Leu	Ala	Leu	His	Ile	Pro	Glu	Glu	Asp	Arg	Ser	Ile	Asp	
1745						1750					1755				
Ile	Leu	Glu	Leu	Ile	Glu	Met	Glu	Lys	Leu	Leu	Ser	Phe	His	Ala	
1760						1765					1770				
His	Thr	Leu	Thr	Leu	Tyr	Ala	Ala	Leu	Cys	Phe	Gln	Ser	Asn	Tyr	
1775						1780					1785				
Arg	Ala	Ala	His	Thr	Leu	Cys	Ser	His	Val	Asp	Glu	Lys	Gln	Leu	
1790						1795					1800				
Leu	Tyr	Ala	Ile	Arg	Ser	Asp	Tyr	Met	Ser	Gly	Pro	Leu	Arg	Gln	
1805						1810					1815				
Gly	Phe	Tyr	Asp	Leu	Leu	Ile	Ala	Leu	His	Leu	Glu	Ser	His	Ala	
1820						1825					1830				
Tyr	Thr	Met	Glu	Val	Cys	Lys	Asn	Glu	Phe	Ile	Ile	Pro	Ile	Gly	
1835						1840					1845				
Gln	Glu	Leu	Lys	Asp	Val	Tyr	Glu	Asp	Pro	Glu	Met	Cys	His	Ser	
1850						1855					1860				
Leu	Arg	Ser	Leu	Lys	Thr	Glu	Ser	Val	Leu	Pro	Thr	Met	Lys	Met	
1865						1870					1875				
Thr	Asp	Lys	Ala	Asp	Glu	Pro	Ser	Pro	Ser	Glu	Val	Val	Asp	Asn	
1880						1885					1890				
Ile	Arg	Ser	Leu	Tyr	Ser	Pro	Gln	Phe	Pro	Leu	Asp	Val	Val	Arg	
1895						1900					1905				
Asp	Phe	Val	Met	Ala	Ala	Leu	Asp	Glu	Ala	Val	Gln	Ile	Asn	Gln	

1910	1915	1920
Leu His Asn Arg Asp Pro Val Gly Gly Ser Asn Glu Asn Tyr Phe 1925 1930 1935		
Leu Pro Leu Leu Lys Leu Val Asp Arg Leu Leu Leu Val Gly Met 1940 1945 1950		
Leu Arg Asp Gly Asp Val Met Lys Leu Leu Ile Met Phe Ser Pro 1955 1960 1965		
Glu Thr Trp Asp Thr Ala Phe Glu Lys Asp Gly Lys Asp Glu His 1970 1975 1980		
Arg Lys Gly Leu Leu Thr Met Lys Met Ala Glu Gly Ala Lys Leu 1985 1990 1995		
Gln Met Cys Tyr Leu Leu His His Leu Tyr Asp Ile Gln Leu Arg 2000 2005 2010		
His Arg Val Glu Ala Ile Ile Ser Phe Ser Val Asp Phe Val Gly 2015 2020 2025		
Asp Leu Gln Ser Asp Gln Leu Arg Arg Tyr Ile Glu Ile Lys Gln 2030 2035 2040		
Ser Asp Leu Pro Ser Ala Ile Ala Ala Lys Lys Thr Arg Glu Phe 2045 2050 2055		
Arg Cys Pro Pro Arg Glu Gln Met Asn Ala Ile Leu Gly Phe Lys 2060 2065 2070		
Asn Leu Glu Glu Gly Asp Ile Glu Asn Cys Pro Cys Gly Asp Glu 2075 2080 2085		
Leu Arg Glu Arg Leu Asn Ser Phe His Glu Lys Leu Met His Lys 2090 2095 2100		
Val Ser Leu Leu Ala Leu Gln Glu Pro Ser Glu Glu Glu Ala Ser 2105 2110 2115		
Ala Glu Glu Val Lys Lys Pro Asn Ala Leu Asn Arg Leu Tyr Asn 2120 2125 2130		
Phe Ile Asn Ala Val Lys Glu Leu Glu Glu Thr Pro Gln Ile Glu 2135 2140 2145		
Glu Glu Pro Glu Lys Lys Thr Pro Glu Glu Ile Phe Arg Lys Val 2150 2155 2160		
Leu Ile Ser Thr Ile Val Lys Trp Ala Glu Glu Thr Gln Ile Glu 2165 2170 2175		
Ser Pro Lys Leu Val Arg Glu Met Phe Ser Leu Leu Val Arg Gln 2180 2185 2190		
Tyr Asp Thr Val Gly Glu Leu Ile Arg Ala Leu Gly Lys Thr Tyr 2195 2200 2205		
Val Ile Asn Ser Lys Thr Lys Asp Asp Ala Ala Leu Met Trp Val		

2210	2215	2220
Gly Leu Ser Gln Ile Arg 2225	Ala Leu Leu Pro Val 2230	Gln Met Ser Gln 2235
Glu Glu Glu Gly Leu Met 2240	Arg Glu Arg Leu Trp 2245	Lys Leu Val Asn 2250
Asn His Thr Phe Phe Gln 2255	His Pro Asp Leu Ile 2260	Arg Val Leu Arg 2265
Val His Glu Asn Val Met 2270	Ala Val Met Met Asn 2275	Thr Leu Gly Arg 2280
Arg Ala Gln Ala Gln Ser 2285	Asp Ala Pro Gln Ala 2290	Gly Gln Glu Gly 2295
Glu Pro Val Ala Lys Glu 2300	Lys Asp Thr Ser His 2305	Glu Met Val Val 2310
Ala Cys Cys Arg Phe Leu 2315	Cys Tyr Phe Cys Arg 2320	Thr Ser Arg Gln 2325
Asn Gln Lys Ala Met Phe 2330	Asp His Phe Ala Phe 2335	Leu Leu Glu Asn 2340
Ser Asn Ile Leu Leu Ser 2345	Arg Pro Ser Leu Arg 2350	Gly Ser Thr Pro 2355
Leu Asp Val Ala Tyr Ser 2360	Ser Leu Met Glu Asn 2365	Thr Glu Leu Ala 2370
Leu Ala Leu Arg Glu His 2375	Tyr Leu Glu Lys Ile 2380	Ala Ile Tyr Leu 2385
Ser Arg Cys Gly Leu Gln 2390	Ser Asn Ser Glu Leu 2395	Ile Glu Lys Gly 2400
Tyr Pro Asp Leu Gly Trp 2405	Asp Pro Val Glu Gly 2410	Glu Arg Tyr Leu 2415
Asp Phe Leu Arg Phe Cys 2420	Val Trp Val Asn Gly 2425	Glu Ser Val Glu 2430
Glu Asn Ala Asn Leu Val 2435	Ile Arg Leu Leu Ile 2440	Arg Arg Pro Gly 2445
Cys Leu Gly Pro Ala Leu 2450	Arg Gly Glu Gly Glu 2455	Gly Leu Leu Arg 2460
Ala Ile Val Asp Ala Asn 2465	Lys Met Ser Glu Arg 2470	Ile Ala Asp Arg 2475
Arg Lys Val Met Asp Glu 2480	Pro Glu Gly Thr Thr 2485	Met Val Met His 2490
Phe Glu His Pro Leu Pro 2495	Glu Ser Asp Asp Asp 2500	Glu Asp Tyr Ile 2505
Asp Thr Gly Ala Ala Ile 2510	Leu Ala Phe Tyr Cys 2515	Thr Leu Val Asp 2520

2510	2515	2520
Leu Leu Gly Arg Cys Ala Pro Asp Ser Ser Val Ile Ala Gln Gly		
2525	2530	2535
Lys Asn Glu Ser Leu Arg Ala Arg Ala Ile Leu Arg Ser Leu Val		
2540	2545	2550
Pro Leu Glu Asp Leu Gln Gly Val Leu Ser Leu Lys Phe Thr Leu		
2555	2560	2565
Gln Asn Pro Ala Ala Gly Glu Glu Arg Pro Lys Ser Asp Met Pro		
2570	2575	2580
Ser Gly Leu Ile Pro Gly His Lys Gln Ser Val Val Leu Phe Leu		
2585	2590	2595
Glu Arg Val Tyr Gly Ile Glu Thr Gln Glu Leu Phe Phe Arg Leu		
2600	2605	2610
Leu Glu Glu Ala Phe Leu Pro Asp Leu Arg Ala Ala Thr Met Leu		
2615	2620	2625
Asp Arg Asn Asp Gly Ser Glu Ser Asp Met Ala Leu Ala Met Asn		
2630	2635	2640
Arg Tyr Ile Gly Asn Ser Ile Leu Pro Leu Leu Ile Thr His Ser		
2645	2650	2655
Lys Phe Tyr Asn Glu Ala Asp Asn Tyr Ala Ser Leu Leu Asp Ala		
2660	2665	2670
Thr Leu His Thr Val Tyr Arg Leu Ser Lys Asn Arg Met Leu Thr		
2675	2680	2685
Lys Gly Gln Arg Glu Ala Val Ser Asp Phe Leu Val Ala Leu Thr		
2690	2695	2700
Ser Ser Met Gln Pro Ser Met Leu Leu Lys Leu Leu Arg Lys Leu		
2705	2710	2715
Thr Val Asp Val Ser Lys Leu Thr Glu Tyr Thr Thr Val Ala Leu		
2720	2725	2730
Arg Leu Leu Thr Leu His Tyr Asp Arg Cys Ala Lys Tyr Tyr Gly		
2735	2740	2745
Ser Thr Gly Gly Gln Gly Leu Tyr Gly Ser Ser Ser Asp Glu Glu		
2750	2755	2760
Lys Arg Leu Thr Met Met Leu Phe Ser Asn Ile Phe Asp Ser Leu		
2765	2770	2775
Ser Lys Met Asp Tyr Asp Pro Glu Leu Phe Gly Lys Ala Leu Pro		
2780	2785	2790
Cys Leu Thr Ala Ile Gly Cys Ala Leu Pro Pro Asp Tyr Ser Leu		
2795	2800	2805
Ser Lys Asn Tyr Asp Asp Glu Leu Tyr Gly Ala Arg Asp Ser Gln		



2810					2815					2820				
Ala Gly	Pro Ser	Asp Gly	Pro Tyr	Asn Pro	Gln Pro	Ile Asn	Thr							
2825			2830			2835								
His Ser	Val Val	Leu Asn	Asn Asp	Leu Asn	Thr Ile	Val Gln	Lys							
2840			2845			2850								
Phe Ser	Glu His	Tyr His	Asp Ala	Trp Ala	Ser Arg	Lys Leu	Glu							
2855			2860			2865								
Asn Gly	Trp Thr	Tyr Gly	Asp Gln	Trp Ser	Asp Ser	Gln Lys	Thr							
2870			2875			2880								
His Pro	Arg Leu	Lys Pro	Tyr Asn	Met Leu	Asn Asp	Tyr Val	Glu							
2885			2890			2895								
Pro Ser	Ile Glu	Arg Glu	Arg Tyr	Lys Glu	Pro Val	Arg Glu	Ser							
2900			2905			2910								
Ile Lys	Ala Leu	Leu Ala	Ile Gly	Trp Thr	Val Glu	His Ser	Glu							
2915			2920			2925								
Ala Asp	Val Pro	Leu Thr	Ser Arg	Gly Ser	Ile Arg	Arg Gln	Ser							
2930			2935			2940								
Lys Pro	Asn Ala	Met Val	Asp Ser	Ser Thr	Pro Phe	Asn Tyr	His							
2945			2950			2955								
Pro Asn	Pro Ile	Asp Met	Thr Asn	Leu Thr	Leu Gly	Arg Glu	Met							
2960			2965			2970								
Gln Asn	Met Ala	Glu Arg	Leu Ala	Glu Asn	Ala His	Asp Ile	Trp							
2975			2980			2985								
Ala Lys	Lys Lys	Lys Glu	Glu Leu	Ile Thr	Cys Gly	Gly Gly	Ile							
2990			2995			3000								
His Pro	Gln Leu	Val Pro	Tyr Asp	Leu Leu	Thr Asp	Lys Glu	Lys							
3005			3010			3015								
Lys Lys	Asp Arg	Glu Arg	Ser Gln	Glu Phe	Leu Lys	Tyr Leu	Gln							
3020			3025			3030								
Tyr Gln	Gly Tyr	Lys Leu	His Arg	Pro Ser	Arg Thr	Gly Gly	Pro							
3035			3040			3045								
Ser Glu	Ser Glu	Gln Leu	Ala Ala	Gln Ala	Thr Gly	Glu Leu	Arg							
3050			3055			3060								
Phe Ala	Tyr Ser	Leu Leu	Glu Lys	Leu Ile	Gln Tyr	Ile Asp	Arg							
3065			3070			3075								
Ala Ser	Ile Asn	Met Lys	Leu Leu	Lys Pro	Ser Thr	Thr Phe	Ser							
3080			3085			3090								
Arg Arg	Ser Ser	Phe Lys	Thr Cys	Thr Arg	Asp Ile	Lys Phe	Phe							
3095			3100			3105								
Ser Lys	Val Val	Leu Pro	Leu Val	Glu Lys	Tyr Phe	Ser Thr	His							

3110	3115	3120
Arg Asn Tyr Phe Ile Ala Val	Ala Thr Ala Ser Asn	Asn Ile Gly
3125	3130	3135
Ala Ala Ser Leu Lys Glu Lys	Glu Met Val Ala Ser	Leu Phe Cys
3140	3145	3150
Lys Leu Ala Asn Leu Leu Arg	Ser Arg Leu Ala Ala	Phe Gly Ala
3155	3160	3165
Asp Val Arg Ile Ser Val Lys	Cys Leu Gln Val Leu	Val Lys Gly
3170	3175	3180
Ile Asp Ala Lys Ser Leu Val	Lys Asn Cys Pro Glu	Phe Ile Arg
3185	3190	3195
Thr Ser Met Leu Thr Phe Phe	Asn Asn Thr Ala Asp	Asp Leu Gly
3200	3205	3210
His Thr Ile Gln Asn Leu Gln	Glu Gly Lys Tyr Ser	His Leu Arg
3215	3220	3225
Gly Ala His Leu Lys Thr Ser	Thr Ser Leu Phe Tyr	Ile Asn Asp
3230	3235	3240
Val Ile Leu Pro Val Leu Thr	Ala Met Phe Asp His	Leu Ala Ala
3245	3250	3255
Cys Glu Tyr Gly Ser Asp Leu	Val Leu Asp Glu Ile	Gln Val Ala
3260	3265	3270
Ser Tyr Lys Met Leu Gly Ser	Leu Tyr Thr Leu Gly	Ile Asp Val
3275	3280	3285
Thr Leu Thr His Asp Arg Lys	Tyr Leu Lys Thr Glu	Ile Asp Arg
3290	3295	3300
His Arg Pro Gln Leu Gly Arg	Cys Leu Gly Ala Tyr	Ala Ser Thr
3305	3310	3315
Phe Pro Val Ala Phe Leu Glu	Pro His Leu Asn Lys	His Asn Gln
3320	3325	3330
Phe Ser Leu Val Asn Arg Ile	Ala Asp His Ser Leu	Glu Ala Gln
3335	3340	3345
Asp Ile Leu Ser Arg Met Glu	Ser Thr Met Pro Thr	Leu Asp Asn
3350	3355	3360
Ile Leu Ser Glu Val Asp Gln	Phe Val Glu Ser Asp	Lys Thr His
3365	3370	3375
Asn Asp Ala Pro His Ile Ile	Asp Val Ile Met Pro	Met Leu Cys
3380	3385	3390
Ser Tyr Leu Pro Val Trp Trp	Asn Gln Gly Pro Asp	Asn Val Ala
3395	3400	3405
Leu Thr Ala Gly Asn Tyr Val	Thr Thr Val Thr Ser	Glu His Met

3410		3415		3420
Asn Gln Leu Leu Lys Asn Val Leu Lys Met Ile Lys Lys Asn Ile				
3425		3430		3435
Gly Asn Glu Ser Ala Pro Trp Met Thr Arg Ile Ala Ala Tyr Thr				
3440		3445		3450
Gln Gln Ile Ile Ile Asn Ser Ser Glu Glu Leu Leu Lys Asp Pro				
3455		3460		3465
Phe Leu Pro Leu Ala Glu Arg Val Lys Lys Arg Thr Asp Ala Met				
3470		3475		3480
Phe His Lys Glu Glu Ser Leu Arg Gly Phe Ile Lys Ser Ala Ser				
3485		3490		3495
Asp Asp Thr Ser Gln Ile Glu Ala Gln Ile Gln Glu Asp Trp Gln				
3500		3505		3510
Leu Leu Val Arg Asp Ile Tyr Ser Phe Tyr Pro Leu Leu Ile Lys				
3515		3520		3525
Tyr Val Asp Leu Gln Arg Asn His Trp Leu Arg Asn Asn Ile Ser				
3530		3535		3540
Glu Ala Glu Asp Leu Tyr Asn His Val Ala Glu Ile Phe Asn Thr				
3545		3550		3555
Trp Ser Lys Ser Gln Tyr Phe Leu Lys Glu Glu Gln Asn Phe Ile				
3560		3565		3570
Ser Ala Asn Glu Ile Asp Asn Met Val Leu Ile Met Pro Thr Ala				
3575		3580		3585
Thr Arg Arg Ser Ala Val Val Ser Asp Ser Ala Ala Pro Pro Gly				
3590		3595		3600
Gly Ser Gly Lys Lys Lys Lys Lys Lys Asn Arg Glu Lys Lys Arg Asp				
3605		3610		3615
Lys Asp Lys Glu Leu Gln Ala Ser Leu Met Val Ala Cys Leu Lys				
3620		3625		3630
Arg Leu Leu Pro Val Gly Leu Asn Leu Phe Ala Gly Arg Glu Gln				
3635		3640		3645
Glu Leu Val Gln His Cys Lys Asp Arg Phe Leu Lys Lys Met Gln				
3650		3655		3660
Asp Tyr Glu Ile Val Glu Phe Ala Lys Ile Gln Leu Thr Leu Pro				
3665		3670		3675
Asp Lys Leu Asp Pro Gly Asp Glu Met Ser Trp Gln His Tyr Leu				
3680		3685		3690
Tyr Ser Thr Leu Gly Ser Lys Lys Glu Ile Thr Glu Gly Gly Lys				
3695		3700		3705
Pro Glu Gln Ile Asp Ala Val Val Asp Arg Ile Val Ala Met Ala				

3710	3715	3720
Lys Val Leu Phe Gly Leu His 3725	Met Ile Asp His 3730	Pro Gln Leu Gln 3735
Ser Lys Ala Ser Tyr Arg 3740	Ser Val Val Ser Thr 3745	Gln Arg Lys Arg 3750
Ala Val Ile Ala Cys Phe 3755	Arg Gln Leu Ser Leu 3760	His Ala Leu Pro 3765
Arg His Lys Ala Ile Asn 3770	Ile Phe Ala Arg Ser 3775	Tyr Tyr Glu Leu 3780
Trp Leu Thr Glu Glu Asn 3785	Val Gly Thr Glu Val 3790	Leu Ile Glu Asp 3795
Leu Thr Gln Ser Phe Glu 3800	Asp Ala Glu Leu Lys 3805	Lys Thr Asp Glu 3810
Glu Val Asp Glu Gly Lys 3815	Ser Asp Pro Leu Thr 3820	Gln Leu Val Thr 3825
Thr Phe Cys Arg Gly Ala 3830	Met Thr Glu Arg Ser 3835	Gly Ala Leu Gln 3840
Glu Asp Pro Leu Tyr Met 3845	Ser Tyr Ala Glu Ile 3850	Ala Ala Lys Ser 3855
Cys Gly Glu Glu Glu Glu 3860	Glu Gly Gly Asp Glu 3865	Glu Glu Gly Gly 3870
Glu Gly Glu Glu Gln Gly 3875	Ala Ser Ile His Glu 3880	Gln Glu Met Glu 3885
Lys Gln Lys Leu Leu Phe 3890	His Gln Ser Arg Leu 3895	Ala Asn Arg Gly 3900
Val Ala Glu Met Val Leu 3905	Leu His Ile Ser Ala 3910	Cys Asn Gly Val 3915
Pro Ser Asp Met Val Glu 3920	Lys Thr Leu Gln Leu 3925	Gly Ile Ser Ile 3930
Leu Arg Gly Gly Asn Ile 3935	Asp Ile Gln Met Gly 3940	Met Leu Asn His 3945
Leu Lys Glu Lys Lys Asp 3950	Val Gly Phe Phe Thr 3955	Ser Ile Ala Gly 3960
Leu Met Asn Ser Cys Ser 3965	Val Leu Asp Leu Asp 3970	Ala Phe Glu Arg 3975
Asn Thr Lys Ala Glu Gly 3980	Leu Gly Val Gly Ser 3985	Asp Gly Ala Ala 3990
Gly Glu Lys Asn Met His 3995	Asp Ala Glu Phe Thr 4000	Cys Thr Leu Phe 4005
Arg Phe Ile Gln Leu Thr 4010	Cys Glu Gly His Asn 4015	Leu Glu Trp Gln 4020

4010					4015					4020				
Asn Tyr	Leu Arg	Thr Gln	Ala Gly	Asn Thr	Thr Thr	Thr Val	Asn Val							
4025			4030			4035								
Val Ile	Cys Thr	Val Asp	Tyr Leu	Leu Arg	Leu Gln	Glu Ser	Ile							
4040			4045			4050								
Met Asp	Phe Tyr	Trp His	Tyr Ser	Ser Lys	Glu Leu	Ile Asp	Pro							
4055			4060			4065								
Ala Gly	Lys Ala	Asn Phe	Phe Lys	Ala Ile	Gly Val	Ala Ser	Gln							
4070			4075			4080								
Val Phe	Asn Thr	Leu Ser	Glu Val	Ile Gln	Gly Ala	Cys Thr	Gln							
4085			4090			4095								
Asn Gln	Gln Ala	Leu Ala	His Ser	Lys Leu	Trp Asp	Ala Val	Gly							
4100			4105			4110								
Gly Phe	Leu Phe	Leu Phe	Ser His	Met Gln	Asp Lys	Leu Ser	Lys							
4115			4120			4125								
His Ser	Ser Gln	Val Asp	Leu Leu	Lys Glu	Leu Leu	Asn Leu	Gln							
4130			4135			4140								
Lys Asp	Met Ile	Thr Met	Met Leu	Ser Met	Leu Glu	Gly Asn	Val							
4145			4150			4155								
Val Asn	Gly Thr	Ile Gly	Lys Gln	Met Val	Asp Thr	Leu Val	Glu							
4160			4165			4170								
Ser Ala	Ser Asn	Val Glu	Leu Ile	Leu Lys	Tyr Phe	Asp Met	Phe							
4175			4180			4185								
Leu Lys	Leu Lys	Asp Met	Thr Glu	Ala Pro	Ser Phe	Leu Glu	Ile							
4190			4195			4200								
Asp Pro	Asn His	Asp Gly	Trp Val	Leu Pro	Lys Asp	Phe Lys	Glu							
4205			4210			4215								
Lys Met	Glu Gln	Gln Lys	Ser Tyr	Thr Thr	Glu Glu	Ile Ser	Phe							
4220			4225			4230								
Met Leu	Gln Cys	Cys Glu	Thr Asn	His Asp	Gly Lys	Val Asp	Tyr							
4235			4240			4245								
Ile Gly	Phe Val	Asp Arg	Phe His	Glu Pro	Ser Lys	Glu Ile	Gly							
4250			4255			4260								
Phe Asn	Leu Ala	Val Leu	Leu Thr	Asn Leu	Ser Glu	His Met	Pro							
4265			4270			4275								
Asn Glu	Pro Arg	Leu Ala	Arg Phe	Leu Glu	Thr Ala	Gly Ser	Val							
4280			4285			4290								
Leu Asn	Tyr Phe	Glu Pro	Phe Leu	Gly Arg	Ile Glu	Ile Met	Gly							
4295			4300			4305								
Ser Ser	Lys Arg	Ile Glu	Arg Val	Tyr Phe	Glu Ile	Lys Glu	Ser							

4310		4315		4320
Asn Ile Glu Gln Trp Glu Lys Pro Gln Ile Lys Glu Ser Lys Arg				
4325		4330		4335
Ala Phe Phe Tyr Ser Ile Val Thr Glu Gly Gly Asp Lys Glu Lys				
4340		4345		4350
Leu Glu Ala Phe Val Asn Phe Cys Glu Asp Ala Ile Phe Glu Met				
4355		4360		4365
Thr His Ala Ser Gly Leu Met Ser Val Asp Asp Asp Ser Gly Gly				
4370		4375		4380
Gly Gly Gly Lys Ala Ala Tyr Thr Tyr Ile Ser Glu Glu Asp Glu				
4385		4390		4395
Glu Lys Asn Ala Lys Asp Pro Ile Arg Arg Thr Ile Gln Ala Phe				
4400		4405		4410
Lys Asp Ala Ile Tyr Phe Ile Leu Thr Met Leu Ser Pro Ser Asn				
4415		4420		4425
Ile Lys Thr Lys Ile Asn Glu Met Gln Gln Met Ser Val Pro Glu				
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Ser Gly Phe Ser Val Ser Val Val Leu Arg Tyr Phe Gly Arg Ile				
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Glu Val Lys Lys Glu Asp Glu Ile Met Gly Pro Ile Arg Ala Leu				
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Pro Pro Pro Pro Pro Asp Asn Lys Glu Ala Ser Ser Ser Ser Ala				
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Lys Asp Asp Ser Gly Gln Ala Lys Pro Ala Asp Gly Gly Ala Thr				
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Leu Ala Leu Thr Ala Ser Gly Glu Glu His Lys Glu Gly Gly Ala				
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Thr Glu Glu Gly Ala Glu Asp Gly Ala Lys Pro Glu Gly Ala Glu				
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Thr Thr Glu Gly Thr Thr Met Thr Leu Ala Asp Leu Leu Gly Gly				
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Ser Leu Trp Tyr Phe Ile Phe Ser Ile Leu Gly Asn Phe Asn Asn		
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Thr Leu Arg Thr Ile Leu Gln Ser Val Thr His Asn Gly Lys Gln		

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Thr Val	Ile Ala Phe Asn	Phe	Phe Arg Lys Phe	Tyr Val Gln Glu
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Gly Asp	Glu Ile Glu Pro	Pro	Asp Gly Asp Asp	Tyr Glu Val Tyr
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Arg Ile	Met Phe Asp Ile	Thr	Phe Phe Phe Phe	Val Ile Val Ile
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Leu Arg	Asp Gln Leu Glu	Ser	Val Lys Glu Asp	Met Glu Ser Asn
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Cys Phe	Ile Cys Gly Ile	Gly	Lys Asp Tyr Phe	Asp Lys Val Pro
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His Gly	Phe Asp Thr His	Val	Gln Gln Glu His	Asn Leu Ala Asn
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Tyr Met	Phe Phe Leu Met	His	Leu Ile Asn Lys	Pro Asp Thr Glu
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Tyr Thr	Gly Gln Glu Thr	Tyr	Val Trp Asn Met	Tyr Gln Gln Arg
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Cys Trp	Asp Phe Phe Pro	Val	Gly Asp Cys Phe	Arg Lys Gln Tyr
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tac gag atg gcc att gaa cgg atc gac cgc cag agt tgc tat gta Tyr Glu Met Ala Ile Glu Arg Ile Asp Arg Gln Ser Cys Tyr Val 1580 1585 1590	4779
gtt cga gcg gac gag ctc ttc aac gag gtt acc cag gat gcc tca Val Arg Ala Asp Glu Leu Phe Asn Glu Val Thr Gln Asp Ala Ser 1595 1600 1605	4824
ggc aag gga gcc tca cag ggc atg ttc gtt ggc tgc ttc gtg gac Gly Lys Gly Ala Ser Gln Gly Met Phe Val Gly Cys Phe Val Asp 1610 1615 1620	4869
aca gcc acc ggc atc atc cgc ttc act tgc gag ggc aag gac acc Thr Ala Thr Gly Ile Ile Arg Phe Thr Cys Glu Gly Lys Asp Thr 1625 1630 1635	4914

tct cac cgc tgg atg atg gag cca gac acc aag ctc ttc ccg gcc Ser His Arg Trp Met Met Glu Pro Asp Thr Lys Leu Phe Pro Ala 1640 1645 1650	4959
att ttc gtg gaa gcc acc agc aag gag atc ctt cag atc gag ttg Ile Phe Val Glu Ala Thr Ser Lys Glu Ile Leu Gln Ile Glu Leu 1655 1660 1665	5004
gga cgt acc cct acc aca ttg ccc ctt tcg gcg gcg gta ctg ccc Gly Arg Thr Pro Thr Thr Leu Pro Leu Ser Ala Ala Val Leu Pro 1670 1675 1680	5049
acc agt gac aag cat ata aat cca cag tcc ccg ccg cgt ctg aag Thr Ser Asp Lys His Ile Asn Pro Gln Ser Pro Pro Arg Leu Lys 1685 1690 1695	5094
gtc cag tgc ctg cgt ccg cat cag tgg gct aga gtt cca aat act Val Gln Cys Leu Arg Pro His Gln Trp Ala Arg Val Pro Asn Thr 1700 1705 1710	5139
gcg ctc cag gtg cat gcg ctg aaa ctc tcc gac gtg agg ggt tgg Ala Leu Gln Val His Ala Leu Lys Leu Ser Asp Val Arg Gly Trp 1715 1720 1725	5184
tcc atg ttg tgc gag gac ccc gtg tcc atg ctg gcc ctg cgc atc Ser Met Leu Cys Glu Asp Pro Val Ser Met Leu Ala Leu Arg Ile 1730 1735 1740	5229
cca gag gag gat cgc tgt ata gat att ctg gag ctc atc gag atg Pro Glu Glu Asp Arg Cys Ile Asp Ile Leu Glu Leu Ile Glu Met 1745 1750 1755	5274
gac aag ctt ttg tcc ttc cat gcc cac agt cta acg ctc tat gcg Asp Lys Leu Leu Ser Phe His Ala His Ser Leu Thr Leu Tyr Ala 1760 1765 1770	5319
gct ctt tgt tac caa tcc aat tac aga gct gcc cat gcc ctg tgc Ala Leu Cys Tyr Gln Ser Asn Tyr Arg Ala Ala His Ala Leu Cys 1775 1780 1785	5364
cag cat gtg gac cag aag cag ctg ctc tac gcc atc cgg tcg gag Gln His Val Asp Gln Lys Gln Leu Leu Tyr Ala Ile Arg Ser Glu 1790 1795 1800	5409
tac atg agc gga cca ctg cgg cag ggc ttc tac gac ctg ctg atc Tyr Met Ser Gly Pro Leu Arg Gln Gly Phe Tyr Asp Leu Leu Ile 1805 1810 1815	5454
gcc ctg cat ctg gag tcg cat gcc aca acc atg gag gtg tgc aag Ala Leu His Leu Glu Ser His Ala Thr Thr Met Glu Val Cys Lys 1820 1825 1830	5499
aac gag tac atc aca ccg ctg gga gcc gag ctc aag gaa ctg tac Asn Glu Tyr Ile Thr Pro Leu Gly Ala Glu Leu Lys Glu Leu Tyr 1835 1840 1845	5544
tcc gat gag gag atg cag cac tca ctg aga tcc ctg gtt acg gag Ser Asp Glu Glu Met Gln His Ser Leu Arg Ser Leu Val Thr Glu 1850 1855 1860	5589



tca	gtg	cgt	ccg	cag	ctg	cgg	atg	acg	gag	atc	acc	gaa	ccg	atc	5634
Ser	Val	Arg	Pro	Gln	Leu	Arg	Met	Thr	Glu	Ile	Thr	Glu	Pro	Ile	
1865						1870					1875				
ccc	gac	atc	gac	caa	ttg	tac	tcc	ccg	aag	ttc	ccc	cta	gaa	gta	5679
Pro	Asp	Ile	Asp	Gln	Leu	Tyr	Ser	Pro	Lys	Phe	Pro	Leu	Glu	Val	
1880						1885					1890				
gtc	agg	cag	ttt	gtc	atg	gag	gcg	ctg	aag	gat	gcc	gtc	gag	atc	5724
Val	Arg	Gln	Phe	Val	Met	Glu	Ala	Leu	Lys	Asp	Ala	Val	Glu	Ile	
1895						1900					1905				
aat	cag	gtg	cac	aac	cgc	gat	ccc	atc	ggc	tgg	acc	aac	gag	aac	5769
Asn	Gln	Val	His	Asn	Arg	Asp	Pro	Ile	Gly	Trp	Thr	Asn	Glu	Asn	
1910						1915					1920				
ctc	ttc	ctc	cct	cta	atc	aag	ctc	aca	gac	cgg	cta	ctc	ttg	gtc	5814
Leu	Phe	Leu	Pro	Leu	Ile	Lys	Leu	Thr	Asp	Arg	Leu	Leu	Leu	Val	
1925						1930					1935				
ggc	gtc	ctg	act	gac	gaa	gat	gtc	cag	cgg	cta	ttg	gtc	atg	atc	5859
Gly	Val	Leu	Thr	Asp	Glu	Asp	Val	Gln	Arg	Leu	Leu	Val	Met	Ile	
1940						1945					1950				
gac	ccg	gag	acc	tgg	gac	caa	gcc	ttc	gaa	aga	gag	ggt	aag	gat	5904
Asp	Pro	Glu	Thr	Trp	Asp	Gln	Ala	Phe	Glu	Arg	Glu	Gly	Lys	Asp	
1955						1960					1965				
gag	cac	cgc	aag	ggc	ttg	ctc	acc	atg	aag	atg	gcc	gag	ggc	gcc	5949
Glu	His	Arg	Lys	Gly	Leu	Leu	Thr	Met	Lys	Met	Ala	Glu	Gly	Ala	
1970						1975					1980				
aag	ctg	cag	atg	cgc	tac	ctg	ctg	cac	cat	ctc	tac	gac	acc	cag	5994
Lys	Leu	Gln	Met	Arg	Tyr	Leu	Leu	His	His	Leu	Tyr	Asp	Thr	Gln	
1985						1990					1995				
ctg	cgc	cat	cga	gtg	gag	agc	atc	atc	gcg	ttc	tcc	cac	gac	ttc	6039
Leu	Arg	His	Arg	Val	Glu	Ser	Ile	Ile	Ala	Phe	Ser	His	Asp	Phe	
2000						2005					2010				
gtt	ggc	gac	ctg	cag	acc	gat	cag	ttg	cga	cgt	tat	atc	gag	atc	6084
Val	Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Ile	Glu	Ile	
2015						2020					2025				
aag	caa	tcc	gat	ttg	ccc	agt	gct	gtt	gcg	gcc	aaa	aag	act	aaa	6129
Lys	Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Lys	
2030						2035					2040				
gag	ttc	cgc	tgt	ccg	ccg	cgg	gag	cag	atg	aac	cag	att	ctc	tgc	6174
Glu	Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Gln	Ile	Leu	Cys	
2045						2050					2055				
ttc	aag	aac	ctc	gaa	ccc	gat	gac	cag	gac	aac	tgc	acc	tgt	ggc	6219
Phe	Lys	Asn	Leu	Glu	Pro	Asp	Asp	Gln	Asp	Asn	Cys	Thr	Cys	Gly	
2060						2065					2070				
ctt	gag	ttg	cgc	gga	cgc	ttg	ggc	gat	ttc	cac	gat	tcc	ctc	atg	6264
Leu	Glu	Leu	Arg	Gly	Arg	Leu	Gly	Asp	Phe	His	Asp	Ser	Leu	Met	
2075						2080					2085				

caa Gln	aaa Lys	gtg Val	tcg Ser	ctc Leu	aat Asn	gct Ala	ctc Leu	cag Gln	gag Glu	ccg Pro	gat Asp	ggc Gly	gtc Val	gag Glu	6309
	2090					2095					2100				
ggc Gly	aca Thr	gcg Ala	atc Ile	gag Glu	gag Glu	gta Val	aag Lys	aca Thr	gga Gly	ccc Pro	atc Ile	acg Thr	aag Lys	atc Ile	6354
	2105					2110					2115				
tac Tyr	aac Asn	ttt Phe	att Ile	aac Asn	acc Thr	gtc Val	aag Lys	gag Glu	ctg Leu	gag Glu	gag Glu	ggc Gly	ccc Pro	aag Lys	6399
	2120					2125					2130				
gag Glu	gtg Val	gag Glu	gag Glu	ccg Pro	gag Glu	aag Lys	aag Lys	aca Thr	cca Pro	gag Glu	gag Glu	gtg Val	ttc Phe	cgc Arg	6444
	2135					2140					2145				
aaa Lys	gtt Val	ctc Leu	att Ile	aag Lys	acg Thr	atc Ile	gtc Val	agc Ser	tgg Trp	gcc Ala	gag Glu	gag Glu	tca Ser	cag Gln	6489
	2150					2155					2160				
atc Ile	gag Glu	aat Asn	ccc Pro	aaa Lys	ctg Leu	gtg Val	cgc Arg	gag Glu	atg Met	ttt Phe	agt Ser	ctg Leu	ctg Leu	ctg Leu	6534
	2165					2170					2175				
cgg Arg	cag Gln	tac Tyr	gac Asp	acc Thr	gtc Val	gga Gly	gaa Glu	ttg Leu	gtt Val	cgt Arg	gcc Ala	ctg Leu	gag Glu	aag Lys	6579
	2180					2185					2190				
acg Thr	tac Tyr	gtg Val	ata Ile	aac Asn	acc Thr	cga Arg	gcc Ala	cgc Arg	gac Asp	gac Asp	gtg Val	gca Ala	gag Glu	atg Met	6624
	2195					2200					2205				
tgg Trp	gtg Val	ggc Gly	ctc Leu	agc Ser	cag Gln	att Ile	cgc Arg	gcc Ala	ctg Leu	ctg Leu	ccc Pro	gtc Val	cag Gln	atg Met	6669
	2210					2215					2220				
agc Ser	cag Gln	gaa Glu	gag Glu	gag Glu	gaa Glu	ctg Leu	atg Met	cgc Arg	aag Lys	cgg Arg	ctg Leu	tgg Trp	aag Lys	ctg Leu	6714
	2225					2230					2235				
gtt Val	aac Asn	aac Asn	gcc Ala	acc Thr	ttc Phe	ttt Phe	cag Gln	cac His	ccg Pro	gac Asp	ctc Leu	ata Ile	cgc Arg	atc Ile	6759
	2240					2245					2250				
ctg Leu	cgt Arg	gtc Val	cac His	gag Glu	aac Asn	gtg Val	atg Met	gca Ala	gtg Val	atg Met	atg Met	aac Asn	aca Thr	ctc Leu	6804
	2255					2260					2265				
gga Gly	cgg Arg	agg Arg	gca Ala	cag Gln	gca Ala	caa Gln	agc Ser	gat Asp	gcg Ala	ccc Pro	acc Thr	cag Gln	tcg Ser	gag Glu	6849
	2270					2275					2280				
gta Val	gcc Ala	gaa Glu	gga Gly	gct Ala	ccg Pro	tcc Ser	aag Lys	gag Glu	aag Lys	gac Asp	acc Thr	tcc Ser	cac His	gaa Glu	6894
	2285					2290					2295				
atg Met	gtg Val	gta Val	gct Ala	tgc Cys	tgc Cys	cga Arg	ttc Phe	ctc Leu	tgc Cys	tac Tyr	ttc Phe	tgt Cys	cgc Arg	act Thr	6939
	2300					2305					2310				

ggt cgc	caa aac	caa aag	gcc	atg ttt	gat cac	ttc	gac ttt	ctg	6984
Gly Arg	Gln Asn	Gln Lys	Ala	Met Phe	Asp His	Phe	Asp Phe	Leu	
2315			2320			2325			
ctg gac	aac gcc	aac atc	ctg	ctg gca	cgg cca	agc	ctg cga	gga	7029
Leu Asp	Asn Ala	Asn Ile	Leu	Leu Ala	Arg Pro	Ser	Leu Arg	Gly	
2330			2335			2340			
tcc acg	ccc ctc	gat gtg	gca	tac tcg	agt ttg	atg	gag aac	aca	7074
Ser Thr	Pro Leu	Asp Val	Ala	Tyr Ser	Ser Leu	Met	Glu Asn	Thr	
2345			2350			2355			
gaa ttg	gct ctg	gcc ctg	agg	gaa cac	tat cta	gaa	aag atc	gcc	7119
Glu Leu	Ala Leu	Ala Leu	Arg	Glu His	Tyr Leu	Glu	Lys Ile	Ala	
2360			2365			2370			
gtc tac	ctc tcg	cga tgc	gga	cta cag	agc aac	tcg	gag ctc	gtg	7164
Val Tyr	Leu Ser	Arg Cys	Gly	Leu Gln	Ser Asn	Ser	Glu Leu	Val	
2375			2380			2385			
gag aag	ggc tat	ccg gat	ctg	ggg tgg	gat ccc	gtc	gaa ggt	gag	7209
Glu Lys	Gly Tyr	Pro Asp	Leu	Gly Trp	Asp Pro	Val	Glu Gly	Glu	
2390			2395			2400			
cgt tac	ccg gac	ttc ctg	cgc	tat tgc	gtt tgg	gtc	aac ggc	gag	7254
Arg Tyr	Pro Asp	Phe Leu	Arg	Tyr Cys	Val Trp	Val	Asn Gly	Glu	
2405			2410			2415			
agc gtc	gag gag	aat gcg	aac	ctt gtc	att cga	ctt	ctt atc	cgt	7299
Ser Val	Glu Glu	Asn Ala	Asn	Leu Val	Ile Arg	Leu	Leu Ile	Arg	
2420			2425			2430			
cgt ccg	gaa tgc	ttg gga	ccg	gct cta	aga gga	gaa	gga gag	ggt	7344
Arg Pro	Glu Cys	Leu Gly	Pro	Ala Leu	Arg Gly	Glu	Gly Glu	Gly	
2435			2440			2445			
ctg ttc	cgc gcc	atc gtc	gag	gct aat	cgc atg	tcg	gag cgc	atc	7389
Leu Phe	Arg Ala	Ile Val	Glu	Ala Asn	Arg Met	Ser	Glu Arg	Ile	
2450			2455			2460			
tcg gac	cgc tgc	aag atg	cag	gac gag	gcc gag	ggc	acc att	gcc	7434
Ser Asp	Arg Cys	Lys Met	Gln	Asp Glu	Ala Glu	Gly	Thr Ile	Ala	
2465			2470			2475			
ggt cta	aac ttc	aca cat	cct	ctg ccg	gaa ggc	gag	gag gac	gag	7479
Gly Leu	Asn Phe	Thr His	Pro	Leu Pro	Glu Gly	Glu	Glu Asp	Glu	
2480			2485			2490			
gac tat	atc gat	acc ggt	gcc	gcc att	ctg aac	ttc	tac tgc	acc	7524
Asp Tyr	Ile Asp	Thr Gly	Ala	Ala Ile	Leu Asn	Phe	Tyr Cys	Thr	
2495			2500			2505			
ctt gtg	gac cta	ctg ggc	cgc	tgc gct	ccg gac	gct	tcg gtc	atc	7569
Leu Val	Asp Leu	Leu Gly	Arg	Cys Ala	Pro Asp	Ala	Ser Val	Ile	
2510			2515			2520			
gag cag	ggc aag	aac gag	tcc	ctg agg	gct aga	gct	att ctg	aga	7614
Glu Gln	Gly Lys	Asn Glu	Ser	Leu Arg	Ala Arg	Ala	Ile Leu	Arg	
2525			2530			2535			

tct ctg gtg cca ctg gag gat	ttg cag ggg gtg ctc agc ctg aaa	7659
Ser Leu Val Pro Leu Glu Asp	Leu Gln Gly Val Leu Ser Leu Lys	
2540	2545 2550	
ttc acc ctc tca cag acg gcg	ccc ggc gag gag aag ccc aaa tcg	7704
Phe Thr Leu Ser Gln Thr Ala	Pro Gly Glu Glu Lys Pro Lys Ser	
2555	2560 2565	
gac atg ccg tcc ggc ctg cta	ccc aac aat aag cag agc atc gtg	7749
Asp Met Pro Ser Gly Leu Leu	Pro Asn Asn Lys Gln Ser Ile Val	
2570	2575 2580	
ctc ttc ctg gag cgc gtc tac	ggc atc gag gca cag gac ctc ttc	7794
Leu Phe Leu Glu Arg Val Tyr	Gly Ile Glu Ala Gln Asp Leu Phe	
2585	2590 2595	
tac cgc ctg ctg gag gac gcc	ttc ctt ccg gat ctc cgc acc gcc	7839
Tyr Arg Leu Leu Glu Asp Ala	Phe Leu Pro Asp Leu Arg Thr Ala	
2600	2605 2610	
acc att ctg gac aag agc gat	gga tcc gag agc gac atg gcg ctg	7884
Thr Ile Leu Asp Lys Ser Asp	Gly Ser Glu Ser Asp Met Ala Leu	
2615	2620 2625	
gcc atg aac cgc tac ata ggc	aac tcg atc ctg ccg ctg ctc atc	7929
Ala Met Asn Arg Tyr Ile Gly	Asn Ser Ile Leu Pro Leu Leu Ile	
2630	2635 2640	
aag cac tcc aag ttt tac aac	gag gcc gag aac tac gcg agc ctc	7974
Lys His Ser Lys Phe Tyr Asn	Glu Ala Glu Asn Tyr Ala Ser Leu	
2645	2650 2655	
ttg gat gcc act ttg cac acg	gtc tac cgg ctg tcc aag aac cgt	8019
Leu Asp Ala Thr Leu His Thr	Val Tyr Arg Leu Ser Lys Asn Arg	
2660	2665 2670	
atg ctg acc aag ggg caa cgc	gag gct gtt tcc gac ttc ctg gtg	8064
Met Leu Thr Lys Gly Gln Arg	Glu Ala Val Ser Asp Phe Leu Val	
2675	2680 2685	
gcc ctc aca tcc caa atg caa	cct gcc atg ctg ctc aag ctg ctg	8109
Ala Leu Thr Ser Gln Met Gln	Pro Ala Met Leu Leu Lys Leu Leu	
2690	2695 2700	
cgc aag ttg act gtg gat gtg	tcc aag ctg tcc gag tac acc acc	8154
Arg Lys Leu Thr Val Asp Val	Ser Lys Leu Ser Glu Tyr Thr Thr	
2705	2710 2715	
gtg gcc ctc cgg ctt ctc acc	ctg cac ttc gat cgc tgc gcc aaa	8199
Val Ala Leu Arg Leu Leu Thr	Leu His Phe Asp Arg Cys Ala Lys	
2720	2725 2730	
tac tac ggc tca act caa ggc	cag ggc tcc tat gga gcc tca tcg	8244
Tyr Tyr Gly Ser Thr Gln Gly	Gln Gly Ser Tyr Gly Ala Ser Ser	
2735	2740 2745	
gac gag gag aag cgc ctg acg	atg ctg ctg ttc tcg aac att ttt	8289
Asp Glu Glu Lys Arg Leu Thr	Met Leu Leu Phe Ser Asn Ile Phe	
2750	2755 2760	

gac tcg ctc agc aac atg gac tat gac ccg gaa ctg ttc ggt aag Asp Ser Leu Ser Asn Met Asp Tyr Asp Pro Glu Leu Phe Gly Lys 2765 2770 2775	8334
gca ctg ccc tgt ctg atc gcc atc ggc tgc gcc ctg cca ccg gac Ala Leu Pro Cys Leu Ile Ala Ile Gly Cys Ala Leu Pro Pro Asp 2780 2785 2790	8379
tac agc ctg tcc aag aac acg gac gag gac tac tac ggc cgc cag Tyr Ser Leu Ser Lys Asn Thr Asp Glu Asp Tyr Tyr Gly Arg Gln 2795 2800 2805	8424
atg ggc gca ccg gat cag ccg cag tac atg ccc aat ccg atc gac Met Gly Ala Pro Asp Gln Pro Gln Tyr Met Pro Asn Pro Ile Asp 2810 2815 2820	8469
acc aac aac gtg cat ctg gac aac gac ctc aac tcg ctg gtc cag Thr Asn Asn Val His Leu Asp Asn Asp Leu Asn Ser Leu Val Gln 2825 2830 2835	8514
aag ttc agc gag cac tac cac gat gcg tgg gcc agt cgg cgg ttg Lys Phe Ser Glu His Tyr His Asp Ala Trp Ala Ser Arg Arg Leu 2840 2845 2850	8559
gag ggt ggc tgg acc tac gga gac atc cga tcc gat aat gat cgc Glu Gly Gly Trp Thr Tyr Gly Asp Ile Arg Ser Asp Asn Asp Arg 2855 2860 2865	8604
aag cat cct cgc ctg aag ccc tac aac atg ctc agt gaa tac gaa Lys His Pro Arg Leu Lys Pro Tyr Asn Met Leu Ser Glu Tyr Glu 2870 2875 2880	8649
cgc gag cgg tac cgg gat ccg gtg cga gag tgc ctg aag ggt ctg Arg Glu Arg Tyr Arg Asp Pro Val Arg Glu Cys Leu Lys Gly Leu 2885 2890 2895	8694
ctg gcc atc gga tgg acc gtg gag cac tcc gag gtg gag gtg ccg Leu Ala Ile Gly Trp Thr Val Glu His Ser Glu Val Glu Val Pro 2900 2905 2910	8739
ctg aat cat cgc gga tca acg cgg cgt cag tcg aag cct caa att Leu Asn His Arg Gly Ser Thr Arg Arg Gln Ser Lys Pro Gln Ile 2915 2920 2925	8784
aac gag ggc agc ccg ttc aac tat aac ccg cac ccg gtg gac atg Asn Glu Gly Ser Pro Phe Asn Tyr Asn Pro His Pro Val Asp Met 2930 2935 2940	8829
agc aac ctg acc ctg agc agg gag atg cag aac atg gct gag cgc Ser Asn Leu Thr Leu Ser Arg Glu Met Gln Asn Met Ala Glu Arg 2945 2950 2955	8874
ctg gcg gag aat tcc cac gac atc tgg gcc aag aag aag aac gag Leu Ala Glu Asn Ser His Asp Ile Trp Ala Lys Lys Lys Asn Glu 2960 2965 2970	8919
gag ctc aac ggc tgc ggt ggc gtt atc cat ccg caa ctg gtg cca Glu Leu Asn Gly Cys Gly Gly Val Ile His Pro Gln Leu Val Pro 2975 2980 2985	8964

tat gat	ctt ctg acc gac	aaa gag aag aag gat	cgc gag cgc	9009
Tyr Asp	Leu Leu Thr Asp	Lys Glu Lys Lys Lys Asp	Arg Glu Arg	
2990		2995	3000	
tcg cag	gag ttc ctt aag tac	atg caa tac cag ggt	tac aag ctg	9054
Ser Gln	Glu Phe Leu Lys Tyr	Met Gln Tyr Gln Gly	Tyr Lys Leu	
3005		3010	3015	
cac aag	cca tca aag gga gga	gct gtg gag gag ggc	ggc gcc acc	9099
His Lys	Pro Ser Lys Gly Gly	Ala Val Glu Glu Gly	Gly Ala Thr	
3020		3025	3030	
cag gct	gcc gtt gaa ctg cgt	ttc tcg tac tcc cta	ctg gaa aag	9144
Gln Ala	Ala Val Glu Leu Arg	Phe Ser Tyr Ser Leu	Leu Glu Lys	
3035		3040	3045	
ctc ata	cag tat ctg gat aga	gcc acc atc aac atg	aaa ctg cta	9189
Leu Ile	Gln Tyr Leu Asp Arg	Ala Thr Ile Asn Met	Lys Leu Leu	
3050		3055	3060	
aag cca	tcg acc acg ttc agt	cga cgc tca tcc ttt	aag acg gcc	9234
Lys Pro	Ser Thr Thr Phe Ser	Arg Arg Ser Ser Phe	Lys Thr Ala	
3065		3070	3075	
acc cgg	gac atc aag ttc ttc	tcg aag gtg gtg ctg	cct cta atg	9279
Thr Arg	Asp Ile Lys Phe Phe	Ser Lys Val Val Leu	Pro Leu Met	
3080		3085	3090	
gag aag	tac ttc tca acg cat	cgc aac tac ttc atc	gcc att gcc	9324
Glu Lys	Tyr Phe Ser Thr His	Arg Asn Tyr Phe Ile	Ala Ile Ala	
3095		3100	3105	
acg gca	acc aat aat att gga	gca gcc tcg ctc aag	gag aag gaa	9369
Thr Ala	Thr Asn Asn Ile Gly	Ala Ala Ser Leu Lys	Glu Lys Glu	
3110		3115	3120	
atg gtg	gcc tcg atc ttc tgc	aag ctg gcc gct cta	ctg cgt aac	9414
Met Val	Ala Ser Ile Phe Cys	Lys Leu Ala Ala Leu	Leu Arg Asn	
3125		3130	3135	
cgg ctg	agt gca ttt gga ccg	gat gtc cgc atc aca	gta cgg tgc	9459
Arg Leu	Ser Ala Phe Gly Pro	Asp Val Arg Ile Thr	Val Arg Cys	
3140		3145	3150	
ctc cag	gtc ctg gtc aag ggc	att gat gca cgc acc	ctg acc aag	9504
Leu Gln	Val Leu Val Lys Gly	Ile Asp Ala Arg Thr	Leu Thr Lys	
3155		3160	3165	
aat tgt	ccc gag ttt att cgc	acc tcc atg ctg acc	ttc ttc aac	9549
Asn Cys	Pro Glu Phe Ile Arg	Thr Ser Met Leu Thr	Phe Phe Asn	
3170		3175	3180	
cag aca	tcc gat gac ttg ggt	aac acg atc ctt aac	ctg cag gat	9594
Gln Thr	Ser Asp Asp Leu Gly	Asn Thr Ile Leu Asn	Leu Gln Asp	
3185		3190	3195	
ggc aag	tac agt cac ctg aga	ggc act cac ctg aaa	acc tcc aca	9639
Gly Lys	Tyr Ser His Leu Arg	Gly Thr His Leu Lys	Thr Ser Thr	
3200		3205	3210	

tcg	ttg	gga	tat	gta	aac	cag	gtg	gtt	ttg	ccg	gtg	ctt	act	gcc	9684
Ser	Leu	Gly	Tyr	Val	Asn	Gln	Val	Val	Leu	Pro	Val	Leu	Thr	Ala	
3215						3220					3225				
atg	ttt	gat	cat	ctg	gca	gcc	tgc	gac	tat	ggc	agc	gat	ttg	ctt	9729
Met	Phe	Asp	His	Leu	Ala	Ala	Cys	Asp	Tyr	Gly	Ser	Asp	Leu	Leu	
3230						3235					3240				
ctg	gac	gag	att	cag	gtg	gct	tcc	tac	aag	atc	ctc	gct	gca	ctg	9774
Leu	Asp	Glu	Ile	Gln	Val	Ala	Ser	Tyr	Lys	Ile	Leu	Ala	Ala	Leu	
3245						3250					3255				
tat	cat	ttg	ggg	acc	gat	ggc	acc	ctg	acg	cat	gac	agg	aag	tat	9819
Tyr	His	Leu	Gly	Thr	Asp	Gly	Thr	Leu	Thr	His	Asp	Arg	Lys	Tyr	
3260						3265					3270				
ctt	aag	acc	gag	att	gag	agg	cat	aga	ccc	gct	ctg	ggc	tcc	tgt	9864
Leu	Lys	Thr	Glu	Ile	Glu	Arg	His	Arg	Pro	Ala	Leu	Gly	Ser	Cys	
3275						3280					3285				
ctg	gga	gct	tac	agc	tcc	tgc	ttt	ccg	gtg	gcc	ttc	ttg	gag	ccc	9909
Leu	Gly	Ala	Tyr	Ser	Ser	Cys	Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro	
3290						3295					3300				
cac	ctt	aac	aag	cac	aac	cag	tac	tcg	ctg	ctc	aac	cgt	att	gcg	9954
His	Leu	Asn	Lys	His	Asn	Gln	Tyr	Ser	Leu	Leu	Asn	Arg	Ile	Ala	
3305						3310					3315				
gat	cac	tca	ctg	gag	gcg	cag	gac	att	atg	gtc	aag	atg	gag	agc	9999
Asp	His	Ser	Leu	Glu	Ala	Gln	Asp	Ile	Met	Val	Lys	Met	Glu	Ser	
3320						3325					3330				
tgt	atg	cca	aat	cta	gag	acc	att	ctc	gcc	gag	gtc	gac	cag	ttt	10044
Cys	Met	Pro	Asn	Leu	Glu	Thr	Ile	Leu	Ala	Glu	Val	Asp	Gln	Phe	
3335						3340					3345				
gtg	gag	tcg	gac	aag	aca	tac	aat	gat	gcg	cct	cat	att	atc	gac	10089
Val	Glu	Ser	Asp	Lys	Thr	Tyr	Asn	Asp	Ala	Pro	His	Ile	Ile	Asp	
3350						3355					3360				
gtg	atc	ctg	ccg	ctg	ctt	tgc	gcc	tat	cta	ccg	ttt	tgg	tgg	tcc	10134
Val	Ile	Leu	Pro	Leu	Leu	Cys	Ala	Tyr	Leu	Pro	Phe	Trp	Trp	Ser	
3365						3370					3375				
cag	gga	ccg	gat	aat	gtc	agt	ccc	acc	agt	ggc	aac	cac	gtg	acc	10179
Gln	Gly	Pro	Asp	Asn	Val	Ser	Pro	Thr	Ser	Gly	Asn	His	Val	Thr	
3380						3385					3390				
atg	gtc	aca	gcc	gat	cac	atg	aat	ccg	ttg	ctg	cga	aat	gtg	ctt	10224
Met	Val	Thr	Ala	Asp	His	Met	Asn	Pro	Leu	Leu	Arg	Asn	Val	Leu	
3395						3400					3405				
aaa	atg	atc	aag	aag	aac	att	ggc	aac	gat	aac	gcc	cct	tgg	atg	10269
Lys	Met	Ile	Lys	Lys	Asn	Ile	Gly	Asn	Asp	Asn	Ala	Pro	Trp	Met	
3410						3415					3420				
act	cgc	att	gcc	gcc	tat	acg	cag	cag	att	atc	atc	aat	acg	tcg	10314
Thr	Arg	Ile	Ala	Ala	Tyr	Thr	Gln	Gln	Ile	Ile	Ile	Asn	Thr	Ser	
3425						3430					3435				

gag Glu	gag Glu	ctg Leu	ctc Leu	aag Lys	gat Asp	ccg Pro	ttc Phe	ttg Leu	ccg Pro	ctg Leu	gcg Ala	gag Glu	cgg Arg	gtg Val	10359
3440						3445					3450				
aag Lys	aag Lys	cgc Arg	act Thr	gag Glu	aac Asn	atg Met	ctg Leu	cac His	aag Lys	gag Glu	gac Asp	agc Ser	atg Met	cga Arg	10404
3455						3460					3465				
gga Gly	ttc Phe	atc Ile	aag Lys	tcg Ser	gcc Ala	acg Thr	gac Asp	gac Asp	act Thr	tcg Ser	cag Gln	gtg Val	gag Glu	acc Thr	10449
3470						3475					3480				
cag Gln	ctg Leu	cag Gln	gag Glu	gac Asp	tgg Trp	aat Asn	ctg Leu	cta Leu	gtg Val	cga Arg	gac Asp	ata Ile	tac Tyr	tcg Ser	10494
3485						3490					3495				
ttc Phe	tat Tyr	ccc Pro	ctg Leu	ctc Leu	atc Ile	aag Lys	tac Tyr	gtg Val	gat Asp	ctg Leu	cag Gln	cga Arg	aac Asn	cac His	10539
3500						3505					3510				
tgg Trp	ctg Leu	aag Lys	gac Asp	aac Asn	ata Ile	ccg Pro	gag Glu	gcc Ala	gag Glu	gag Glu	ctc Leu	tac Tyr	aac Asn	cat His	10584
3515						3520					3525				
gtg Val	gca Ala	gag Glu	atc Ile	ttc Phe	aat Asn	ata Ile	tgg Trp	tct Ser	aag Lys	agc Ser	cag Gln	tac Tyr	ttc Phe	ctt Leu	10629
3530						3535					3540				
aag Lys	gag Glu	gag Glu	cag Gln	aac Asn	ttc Phe	atc Ile	tct Ser	gcc Ala	aat Asn	gag Glu	atc Ile	gac Asp	aac Asn	atg Met	10674
3545						3550					3555				
gcc Ala	ttg Leu	atc Ile	atg Met	cca Pro	act Thr	gca Ala	acc Thr	agg Arg	agg Arg	tcg Ser	gcc Ala	atc Ile	tcg Ser	gaa Glu	10719
3560						3565					3570				
ggg Gly	gct Ala	cct Pro	gct Ala	gtg Val	ggg Gly	ggc Gly	aag Lys	gta Val	aag Lys	aag Lys	aag Lys	aag Lys	aag Lys	aac Asn	10764
3575						3580					3585				
agg Arg	gac Asp	aag Lys	aag Lys	cgc Arg	gac Asp	aag Lys	gac Asp	aag Lys	gag Glu	gtg Val	cag Gln	gcc Ala	agt Ser	cta Leu	10809
3590						3595					3600				
atg Met	gtg Val	gcc Ala	tgc Cys	ctg Leu	aaa Lys	cgc Arg	ctc Leu	cta Leu	ccc Pro	ggt Val	gga Gly	ctg Leu	aat Asn	ctg Leu	10854
3605						3610					3615				
ttc Phe	gcg Ala	ggg Gly	cga Arg	gag Glu	cag Gln	gaa Glu	ctg Leu	gtg Val	cag Gln	cac His	tgc Cys	aag Lys	gat Asp	cgg Arg	10899
3620						3625					3630				
tac Tyr	ctg Leu	aag Lys	aag Lys	atg Met	ccc Pro	gag Glu	tac Tyr	gat Asp	gtg Val	atc Ile	gag Glu	ttc Phe	gcc Ala	cgc Arg	10944
3635						3640					3645				
aac Asn	cag Gln	ctg Leu	acc Thr	ctg Leu	ccg Pro	gat Asp	aag Lys	ctg Leu	gac Asp	ccg Pro	tcg Ser	gac Asp	gag Glu	atg Met	10989
3650						3655					3660				



tcc	tgg	cag	cat	tac	ctt	tac	tca	aag	ctg	ggc	aag	acg	gag	gaa	11034
Ser	Trp	Gln	His	Tyr	Leu	Tyr	Ser	Lys	Leu	Gly	Lys	Thr	Glu	Glu	
3665						3670					3675				
ccg	gtg	gac	gaa	cag	gcg	ctg	gag	aag	gcc	aat	gtt	aac	tcc	aac	11079
Pro	Val	Asp	Glu	Gln	Ala	Leu	Glu	Lys	Ala	Asn	Val	Asn	Ser	Asn	
3680						3685					3690				
gag	aag	ggc	aag	gac	aaa	acc	cag	gag	aca	gtg	gat	cgc	atc	gtg	11124
Glu	Lys	Gly	Lys	Asp	Lys	Thr	Gln	Glu	Thr	Val	Asp	Arg	Ile	Val	
3695						3700					3705				
gcg	atg	gcc	aag	gtt	ctg	ttt	ggc	ctg	cac	atg	atc	gac	cat	cca	11169
Ala	Met	Ala	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile	Asp	His	Pro	
3710						3715					3720				
caa	cag	cag	agc	aag	aat	gtc	tac	agg	agc	gtt	gtg	tcg	atc	caa	11214
Gln	Gln	Gln	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val	Ser	Ile	Gln	
3725						3730					3735				
agg	aag	cgt	gcc	gta	atc	gca	tgc	ttc	cgt	cag	aca	tcg	ctg	cat	11259
Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Thr	Ser	Leu	His	
3740						3745					3750				
tct	cta	ccc	aga	cat	cgg	gcc	tgc	aac	atc	ttc	gca	cga	tcg	tac	11304
Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe	Ala	Arg	Ser	Tyr	
3755						3760					3765				
tac	gag	cag	tgg	ctg	cag	gag	gag	aac	gtg	ggc	caa	gag	gtg	atg	11349
Tyr	Glu	Gln	Trp	Leu	Gln	Glu	Glu	Asn	Val	Gly	Gln	Glu	Val	Met	
3770						3775					3780				
gtc	gaa	gat	ctg	acg	cag	acg	ttc	gag	gac	tcc	gag	aaa	tcc	aag	11394
Val	Glu	Asp	Leu	Thr	Gln	Thr	Phe	Glu	Asp	Ser	Glu	Lys	Ser	Lys	
3785						3790					3795				
aag	gag	ggc	gag	gag	acg	gac	agc	aag	ccg	gat	ccg	cta	acc	caa	11439
Lys	Glu	Gly	Glu	Glu	Thr	Asp	Ser	Lys	Pro	Asp	Pro	Leu	Thr	Gln	
3800						3805					3810				
ctg	gtt	acc	act	ttc	tgc	cgc	ggc	gcc	atg	acg	gaa	cgc	agc	ggt	11484
Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu	Arg	Ser	Gly	
3815						3820					3825				
gcc	ctc	cag	gag	gat	ctg	ctc	tac	atg	tcc	tat	gcc	cag	atc	gcg	11529
Ala	Leu	Gln	Glu	Asp	Leu	Leu	Tyr	Met	Ser	Tyr	Ala	Gln	Ile	Ala	
3830						3835					3840				
gcc	aag	tcc	acg	ggc	aag	gag	gag	gag	gaa	ggc	ggc	gac	gaa	gaa	11574
Ala	Lys	Ser	Thr	Gly	Lys	Glu	Glu	Glu	Glu	Gly	Gly	Asp	Glu	Glu	
3845						3850					3855				
ggc	ggt	gag	ggt	ggc	gaa	gag	gcc	gaa	ggc	acc	agc	atc	cat	gaa	11619
Gly	Gly	Glu	Gly	Gly	Glu	Glu	Ala	Glu	Gly	Thr	Ser	Ile	His	Glu	
3860						3865					3870				
caa	gag	atg	gag	aag	cag	aag	ctg	ctc	ttc	cat	cag	gca	cgt	ctc	11664
Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His	Gln	Ala	Arg	Leu	
3875						3880					3885				

tcc aat cgt ggc gtt gcc gaa atg gtg ctg ttg cac gtt tcc gcc Ser Asn Arg Gly Val Ala Glu Met Val Leu Leu His Val Ser Ala 3890 3895 3900	11709
tcc aaa ggt ata cct tcg gag atg gta atg acg aca ctc aat ctc Ser Lys Gly Ile Pro Ser Glu Met Val Met Thr Thr Leu Asn Leu 3905 3910 3915	11754
ggc atc gcc att ttg cgc ggc ggc aac atc gac atc caa atg ggc Gly Ile Ala Ile Leu Arg Gly Gly Asn Ile Asp Ile Gln Met Gly 3920 3925 3930	11799
atg ctg aac cac ttg aag gaa aag aag gac gtt ggc ttc ttt acc Met Leu Asn His Leu Lys Glu Lys Lys Asp Val Gly Phe Phe Thr 3935 3940 3945	11844
tcc atc gcc gga ctg atg aac tcc tgc agt gta ctg gac ctg gac Ser Ile Ala Gly Leu Met Asn Ser Cys Ser Val Leu Asp Leu Asp 3950 3955 3960	11889
gcc ttt gag cga aac acc aaa gca gag ggt ctt ggt gta ggt tcc Ala Phe Glu Arg Asn Thr Lys Ala Glu Gly Leu Gly Val Gly Ser 3965 3970 3975	11934
gaa ggc gcc gcg ggc gag aag aac atg cac gac gcg gag ttc acc Glu Gly Ala Ala Gly Glu Lys Asn Met His Asp Ala Glu Phe Thr 3980 3985 3990	11979
tgt gcg ctg ttc cgg ttc atc cag ctg acc tgc gag ggc cac aac Cys Ala Leu Phe Arg Phe Ile Gln Leu Thr Cys Glu Gly His Asn 3995 4000 4005	12024
ttg gaa tgg caa aac tat ttg agg acc cag gcg ggt aac acc acc Leu Glu Trp Gln Asn Tyr Leu Arg Thr Gln Ala Gly Asn Thr Thr 4010 4015 4020	12069
acc gtg aac gtg gtc atc tgt act gtg gat tat ttg ctt cgt ctg Thr Val Asn Val Val Ile Cys Thr Val Asp Tyr Leu Leu Arg Leu 4025 4030 4035	12114
caa gag tcc atc atg gac ttc tac tgg cac tac tcc agc aaa gag Gln Glu Ser Ile Met Asp Phe Tyr Trp His Tyr Ser Ser Lys Glu 4040 4045 4050	12159
atc atc gat ccc gct gga aag gcc aac ttc ttc aag gcc atc gaa Ile Ile Asp Pro Ala Gly Lys Ala Asn Phe Phe Lys Ala Ile Glu 4055 4060 4065	12204
gtg gct agc caa gta ttt aac acc ctc act gaa gtc atc cag ggt Val Ala Ser Gln Val Phe Asn Thr Leu Thr Glu Val Ile Gln Gly 4070 4075 4080	12249
cct tgt acc ctc aat cag cag gcc ttg gca cac tcg agg ttg tgg Pro Cys Thr Leu Asn Gln Gln Ala Leu Ala His Ser Arg Leu Trp 4085 4090 4095	12294
gat gca gtt ggt ggc ttc ctc ttc ctg ttt tcc cac atg cag gac Asp Ala Val Gly Gly Phe Leu Phe Ser His Met Gln Asp 4100 4105 4110	12339

aag ctg tca aag cac tcc agc caa gtt gat ctg ctc aag gaa ctg	12384
Lys Leu Ser Lys His Ser Ser Gln Val Asp Leu Leu Lys Glu Leu	
4115 4120 4125	
ctg aat ctg caa aag gac atg atc acc atg atg ctt tcc atg ctg	12429
Leu Asn Leu Gln Lys Asp Met Ile Thr Met Met Leu Ser Met Leu	
4130 4135 4140	
gaa gga aat gtt gtt aac ggc act att ggc aag cag atg gtg gac	12474
Glu Gly Asn Val Val Asn Gly Thr Ile Gly Lys Gln Met Val Asp	
4145 4150 4155	
acg ctg gtg gag tct gcc agc aat gtg gag ctg att ctt aag tac	12519
Thr Leu Val Glu Ser Ala Ser Asn Val Glu Leu Ile Leu Lys Tyr	
4160 4165 4170	
ttc gac atg ttc ctg aag ctc gcc gac ctt atc gaa tcg ccc agc	12564
Phe Asp Met Phe Leu Lys Leu Ala Asp Leu Ile Glu Ser Pro Ser	
4175 4180 4185	
ttc cac gaa gtg gac atg aag aac gag ggt tgg gtg acc ccc aaa	12609
Phe His Glu Val Asp Met Lys Asn Glu Gly Trp Val Thr Pro Lys	
4190 4195 4200	
gac ttt agg gaa aag atg gag caa tcc aag aac tac aca ccg gaa	12654
Asp Phe Arg Glu Lys Met Glu Gln Ser Lys Asn Tyr Thr Pro Glu	
4205 4210 4215	
gaa atg gat ttc ctt ttg gcc tgc tgc gag cgc aac cac gag ggc	12699
Glu Met Asp Phe Leu Leu Ala Cys Cys Glu Arg Asn His Glu Gly	
4220 4225 4230	
aag atc gat tac cgg gcc ttc gtg gag cac ttc cac gaa cca tca	12744
Lys Ile Asp Tyr Arg Ala Phe Val Glu His Phe His Glu Pro Ser	
4235 4240 4245	
aag gag atc ggt ttc aac ctg gct gtg ctc ctg acc aac ctc agc	12789
Lys Glu Ile Gly Phe Asn Leu Ala Val Leu Leu Thr Asn Leu Ser	
4250 4255 4260	
gaa cac atg cca aac gaa ccg cgc ctg gcg cgc ttc ctg gag acc	12834
Glu His Met Pro Asn Glu Pro Arg Leu Ala Arg Phe Leu Glu Thr	
4265 4270 4275	
gcc ggc tcg gtg ctc aac tac ttc gag ccc ttc ctg ggc cgc atc	12879
Ala Gly Ser Val Leu Asn Tyr Phe Glu Pro Phe Leu Gly Arg Ile	
4280 4285 4290	
gag att ctc ggc agc tcc aag cgc atc gag cgc gtt tac ttt gag	12924
Glu Ile Leu Gly Ser Ser Lys Arg Ile Glu Arg Val Tyr Phe Glu	
4295 4300 4305	
atc aag gac tcg aac atc gaa cag tgg gag aag ccc cag att cgc	12969
Ile Lys Asp Ser Asn Ile Glu Gln Trp Glu Lys Pro Gln Ile Arg	
4310 4315 4320	
gag tcc aag cgt gcc ttc ttt tat tcc atc gtc acc gaa ggt ggc	13014
Glu Ser Lys Arg Ala Phe Phe Tyr Ser Ile Val Thr Glu Gly Gly	
4325 4330 4335	

gac aag gag aaa ctg gag gcc ttt gtg aac ttc tgc gag gac gcc Asp Lys Glu Lys Leu Glu Ala Phe Val Asn Phe Cys Glu Asp Ala 4340 4345 4350	13059
atc ttt gag atg acc cac gcc tcg gga ctt atg gcc acc gat gat Ile Phe Glu Met Thr His Ala Ser Gly Leu Met Ala Thr Asp Asp 4355 4360 4365	13104
ggc ggt ggc aat gtg aag cgg gac act gcc tat agt tcc tat atg Gly Gly Gly Asn Val Lys Arg Asp Thr Ala Tyr Ser Ser Tyr Met 4370 4375 4380	13149
agc gag gaa gag gag gag cga gcc gct cgt gat ccc atc cgc cgc Ser Glu Glu Glu Glu Glu Arg Ala Ala Arg Asp Pro Ile Arg Arg 4385 4390 4395	13194
acc atc acc gcc gtc aaa gaa gga ctc aag ttc gga gtg cac atg Thr Ile Thr Ala Val Lys Glu Gly Leu Lys Phe Gly Val His Met 4400 4405 4410	13239
ctt agt ccg gcg aac atc aag cat cag atc gga gtg atg cag acc Leu Ser Pro Ala Asn Ile Lys His Gln Ile Gly Val Met Gln Thr 4415 4420 4425	13284
aaa tcc ata cca gaa ctc ata gtc ggc ttt ttc aag atc atc ttc Lys Ser Ile Pro Glu Leu Ile Val Gly Phe Phe Lys Ile Ile Phe 4430 4435 4440	13329
tat ata ttt tac tat acc gga tat gca cac ttc tgc gtg gtg cgt Tyr Ile Phe Tyr Tyr Thr Gly Tyr Ala His Phe Cys Val Val Arg 4445 4450 4455	13374
tac ata ttc ggc atc cta ctg aac ctg atg cga gga cct gct cca Tyr Ile Phe Gly Ile Leu Leu Asn Leu Met Arg Gly Pro Ala Pro 4460 4465 4470	13419
gag cag gag gag gaa ccg gta gtg gag gag gaa acg ttt gga aga Glu Gln Glu Glu Glu Pro Val Val Glu Glu Glu Thr Phe Gly Arg 4475 4480 4485	13464
gca ctg cca ccg ctg tcg ctt gaa gaa cca ccg ggc acg gtg caa Ala Leu Pro Pro Leu Ser Leu Glu Glu Pro Pro Gly Thr Val Gln 4490 4495 4500	13509
gcc ttt ggg ctg gac atc aac aag gag gag aac ggc atg tac aag Ala Phe Gly Leu Asp Ile Asn Lys Glu Glu Asn Gly Met Tyr Lys 4505 4510 4515	13554
gtg gtg gtg cac gaa tct cca gcc aat tcc tcg atg gag gag ggc Val Val Val His Glu Ser Pro Ala Asn Ser Ser Met Glu Glu Gly 4520 4525 4530	13599
gga gaa tcc agt ccc gag gac gga gca gct gcc agc ggc gaa ttg Gly Glu Ser Ser Pro Glu Asp Gly Ala Ala Ala Ser Gly Glu Leu 4535 4540 4545	13644
gtc gaa ggt gaa cca cac cag ggg ccc att tcc att gtg gat ctg Val Glu Gly Glu Pro His Gln Gly Pro Ile Ser Ile Val Asp Leu 4550 4555 4560	13689

ctg ggt gga gag gct gca aag aag gcg gca cag gag cgg cag gag 13734 Leu Gly Gly Glu Ala Ala Lys Lys Ala Ala Gln Glu Arg Gln Glu 4565 4570 4575
gcg caa aag gct cag gag gcc gct atg gcc tcc atc gag gcg gaa 13779 Ala Gln Lys Ala Gln Glu Ala Ala Met Ala Ser Ile Glu Ala Glu 4580 4585 4590
gcc aag aag tcg tca tct gcg cct cag gag act cca gct gtt cac 13824 Ala Lys Lys Ser Ser Ser Ala Pro Gln Glu Thr Pro Ala Val His 4595 4600 4605
cag atc gac ttt tct cag tac acc cat cgc gcc gtt agc ttc ctc 13869 Gln Ile Asp Phe Ser Gln Tyr Thr His Arg Ala Val Ser Phe Leu 4610 4615 4620
gcc aga aac ttc tac aac ctc aag tat gtg gcc ttg gtg ctg gct 13914 Ala Arg Asn Phe Tyr Asn Leu Lys Tyr Val Ala Leu Val Leu Ala 4625 4630 4635
ttc agc att aac ttc atg ctg ctc ttc tac aaa gtc acc tcg ttt 13959 Phe Ser Ile Asn Phe Met Leu Leu Phe Tyr Lys Val Thr Ser Phe 4640 4645 4650
acc gaa gaa gca gac agc tct gcc gaa gag gag ctc atc ctg gcc 14004 Thr Glu Glu Ala Asp Ser Ser Ala Glu Glu Glu Leu Ile Leu Gly 4655 4660 4665
tcc ggg ccg gga gga ggt gcg gac atc acg ggc tct ggg ttt ggc 14049 Ser Gly Pro Gly Gly Gly Ala Asp Ile Thr Gly Ser Gly Phe Gly 4670 4675 4680
gga tca ggg gac gga gga tcg ggc gat ggc gaa atg gag gac gag 14094 Gly Ser Gly Asp Gly Gly Ser Gly Asp Gly Glu Met Glu Asp Glu 4685 4690 4695
ata ccg gaa ctt gtg cac gtg gac gaa gac ttc ttc tac atg gaa 14139 Ile Pro Glu Leu Val His Val Asp Glu Asp Phe Phe Tyr Met Glu 4700 4705 4710
cac gtt ctc cgc att gcg gca tgt ctg cac tca ctt gtc tcc ctg 14184 His Val Leu Arg Ile Ala Ala Cys Leu His Ser Leu Val Ser Leu 4715 4720 4725
gcc atg ttg att gcc tac tac cac ctc aag gtt cca ttg gcc atc 14229 Ala Met Leu Ile Ala Tyr Tyr His Leu Lys Val Pro Leu Ala Ile 4730 4735 4740
ttc aag cgg gaa aaa gag att gcc cgc cgg ctg gag ttc gag gga 14274 Phe Lys Arg Glu Lys Glu Ile Ala Arg Arg Leu Glu Phe Glu Gly 4745 4750 4755
ttg ttc att gca gag cag ccg gag gat gac gac ttc aag tcg cac 14319 Leu Phe Ile Ala Glu Gln Pro Glu Asp Asp Asp Phe Lys Ser His 4760 4765 4770
tgg gac aag ctg gta att tcg gcg aaa agt ttc ccg gtg aac tac 14364 Trp Asp Lys Leu Val Ile Ser Ala Lys Ser Phe Pro Val Asn Tyr 4775 4780 4785

tgg gac aag ttc gtg aag aag aag gtg cgc caa aag tac agc gag	14409
Trp Asp Lys Phe Val Lys Lys Lys Val Arg Gln Lys Tyr Ser Glu	
4790 4795 4800	
acc tac gac ttt gat tcg atc tct aat ctg ctg ggc atg gag aag	14454
Thr Tyr Asp Phe Asp Ser Ile Ser Asn Leu Leu Gly Met Glu Lys	
4805 4810 4815	
agc acg ttc gcg gct cag gag agc gag gaa acg ggc atc ttc aag	14499
Ser Thr Phe Ala Ala Gln Glu Ser Glu Glu Thr Gly Ile Phe Lys	
4820 4825 4830	
tac atc atg aac atc gac tgg cgc tat cag gtg tgg aag gct ggc	14544
Tyr Ile Met Asn Ile Asp Trp Arg Tyr Gln Val Trp Lys Ala Gly	
4835 4840 4845	
gtc acc ttc acg gac aac gcc ttc ctc tac tcg ctg tgg tac ttc	14589
Val Thr Phe Thr Asp Asn Ala Phe Leu Tyr Ser Leu Trp Tyr Phe	
4850 4855 4860	
agc ttc tcg gtg atg ggt aac ttc aac aac ttc ttc ttc gcc gcc	14634
Ser Phe Ser Val Met Gly Asn Phe Asn Asn Phe Phe Phe Ala Ala	
4865 4870 4875	
cat ctg ctc gat gtg gcc gtg ggc ttc aag acc ctg cgc acc atc	14679
His Leu Leu Asp Val Ala Val Gly Phe Lys Thr Leu Arg Thr Ile	
4880 4885 4890	
ctg cag tct gtg acc cac aac ggc aag caa ctg gtg ctc acc gtg	14724
Leu Gln Ser Val Thr His Asn Gly Lys Gln Leu Val Leu Thr Val	
4895 4900 4905	
atg ctg ctt acc atc ata gtg tac atc tac act gtg atc gcg ttc	14769
Met Leu Leu Thr Ile Ile Val Tyr Ile Tyr Thr Val Ile Ala Phe	
4910 4915 4920	
aac ttc ttc agg aag ttc tac atc cag gag gag gac gag gag gtg	14814
Asn Phe Phe Arg Lys Phe Tyr Ile Gln Glu Glu Asp Glu Glu Val	
4925 4930 4935	
gac aaa aag tgc cac gac atg ttg acc tgc ttc gtg ttc cat ctg	14859
Asp Lys Lys Cys His Asp Met Leu Thr Cys Phe Val Phe His Leu	
4940 4945 4950	
tac aag ggt gcg aga gcg ggc ggt gga ata ggc gac gag atc ggg	14904
Tyr Lys Gly Ala Arg Ala Gly Gly Gly Ile Gly Asp Glu Ile Gly	
4955 4960 4965	
gat cca gat gga gac gac tac gag gtc tac cgc atc atc ttc gat	14949
Asp Pro Asp Gly Asp Asp Tyr Glu Val Tyr Arg Ile Ile Phe Asp	
4970 4975 4980	
atc acg ttc ttc ttc ttc gtt att att atc ctg ctg gcc att atc	14994
Ile Thr Phe Phe Phe Phe Val Ile Ile Ile Leu Leu Ala Ile Ile	
4985 4990 4995	
cag ggt ctg atc atc gac gcc ttc ggc gag ctg cgt gac caa ctg	15039
Gln Gly Leu Ile Ile Asp Ala Phe Gly Glu Leu Arg Asp Gln Leu	
5000 5005 5010	

gag tgc	gtg aag	gac aac	atg	gag tcc	aac tgc	ttc	atc tgc	ggg	15084
Glu Ser	Val Lys	Asp Asn	Met	Glu Ser	Asn Cys	Phe	Ile Cys	Gly	
5015			5020			5025			
atg ggc	aag gac	ttc ttc	gac	ata gta	ccg cac	ggc	ttc gac	acg	15129
Met Gly	Lys Asp	Phe Phe	Asp	Ile Val	Pro His	Gly	Phe Asp	Thr	
5030			5035			5040			
cac gtc	cag aag	gag cac	aac	tta gcc	aac tac	atg	ttc ttc	ctg	15174
His Val	Gln Lys	Glu His	Asn	Leu Ala	Asn Tyr	Met	Phe Phe	Leu	
5045			5050			5055			
atg cat	ttg att	aac aag	ccg	gac acg	gag tat	acc	ggc cag	gag	15219
Met His	Leu Ile	Asn Lys	Pro	Asp Thr	Glu Tyr	Thr	Gly Gln	Glu	
5060			5065			5070			
acg tac	gtg tgg	aac atg	tac	cag cag	cgc agc	tgg	gac ttc	ttc	15264
Thr Tyr	Val Trp	Asn Met	Tyr	Gln Gln	Arg Ser	Trp	Asp Phe	Phe	
5075			5080			5085			
cca gtg	gga gac	tgc ttc	cgc	aag caa	tac gag	gat	gag ctt	tcc	15309
Pro Val	Gly Asp	Cys Phe	Arg	Lys Gln	Tyr Glu	Asp	Glu Leu	Ser	
5090			5095			5100			
ggc gga	ggc ggc	ggc ggc	taa	aatgactg	cggattcgcc	gcgtctgatt			15357
Gly Gly	Gly Gly	Gly Gly							
5105									
tctgggcaca	atcacactgg	cactggacgg	tcgtttaaac	cgggtaagcc	tatccctaac				15417
cctctcctcg	gtctcgattc	tacgtgatct	agagggcccg	cggttcgaag	gtaagcctat				15477
ccctaaccct	ctcctcggtc	tcgattctac	gcgtaccggt	catcatcacc	atcaccattg				15537
agtttatctg	actaaatctt	agtttgtatt	gkcatgtttt	aatacaatat	gttatgttta				15597
aatatgtttt	taataaattt	tataaaaataa	tttcaacttt	tattgtaaca	acattgtcca				15657
tttacacact	cctttcaagc	gcgtgggatc	gatgctcact	caaaggcggt	aatacggtta				15717
tccacagaat	caggggataa	cgcaggaaaag	aacatgtgag	caaaaggcca	gcaaaaggcc				15777
aggaaccgta	aaaaggccgc	ggtgctggcg	ttttccata	ggctccgccc	ccctgacgag				15837
catcacaaaa	atcgacgctc	aagtcagagg	tggcgaaacc	cgacaggact	atnaagatac				15897
caggcgtttc	cccctggaag	ctccctcctg	gacggtccaa	ggactctcgg	gatccaattt				15957
tgtatcggtg	gtttgacaac	atctggaatt	tttacctagt	caacttttagc	aatgtatttt				16017
aagcaatatc	ctacacaatc	gttttttatgt	acgtagagga	gtacgacctg	tttccaaact				16077
gaaatattga	tgacgattct	agcacgtata	acaacaaatg	ttcttaactc	attttgaaat				16137
aaatctattc	attttgaaag	aacccctttg	gtcttcgata	ttttatttat	tcccgtttag				16197
atcgtaaga	agaacaaatt	ttgttttggg	taaatattta	attactttcg	aacattaaga				16257
cttgtcatct	caaatatcaa	ggctgggttag	tcgaattatt	tacaagaata	gagcaaaagc				16317
ttgtaaattt	tcggaatacc	tttcataat	gtaaaaacag	tcattt					16363

&lt;210&gt; 10

&lt;211&gt; 5109

&lt;212&gt; PRT

&lt;213&gt; Drosophila melanogaster

&lt;400&gt; 10

Met	Ala	Glu	Ala	Glu	Gly	Gly	Ser	Glu	Gln	Asp	Asp	Val	Ser	Phe	Leu
1				5				10						15	

Arg	Thr	Glu	Asp	Met	Val	Thr	Leu	Ser	Cys	Thr	Ala	Thr	Gly	Glu	Arg
		20					25						30		

Val	Cys	Leu	Ala	Ala	Glu	Gly	Phe	Gly	Asn	Arg	His	Cys	Phe	Leu	Glu
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

35	40	45
Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe 50 55 60		
Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr 65 70 75 80		
Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr 85 90 95		
Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met 100 105 110		
Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe 115 120 125		
Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr 130 135 140		
Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val 145 150 155 160		
Gly Asp Gly Leu Ile Pro Val Ser Val Ala Thr Glu Arg Tyr Leu His 165 170 175		
Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val 180 185 190		
Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys 195 200 205		
Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly 210 215 220		
Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Gly Arg Glu Ala Gly 225 230 235 240		
Gln Asn Ile Val Ile Tyr Glu Gly Gly Val Val Met Ala Gln Ala Arg 245 250 255		
Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Ala Gly Gly Phe 260 265 270		
Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Ile Thr Thr Gly Arg 275 280 285		
Tyr Leu Gly Val Asn Asp Ser Asn Glu Leu Ile Leu Val Lys Lys Glu 290 295 300		
Glu Ala Ser Ile Ala Thr Thr Thr Phe Cys Leu Arg Gln Glu Lys Asp 305 310 315 320		
Asp Glu Lys Lys Val Leu Glu Asp Lys Asp Leu Glu Val Ile Gly Ser 325 330 335		
Pro Ile Ile Lys Tyr Gly Asp Thr Thr Val Ile Val Gln His Cys Glu 340 345 350		
Thr Ser Leu Trp Leu Ser Tyr Lys Ser Tyr Glu Thr Lys Lys Gly		



355	360	365
Val Gly Lys Val Glu Glu Lys Gln Ala Ile Leu His Glu Glu Gly Lys 370 375 380		
Met Asp Asp Cys Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser Lys 385 390 395 400		
Thr Ala Arg Val Ile Arg Lys Cys Ser Ser Leu Phe Thr Gln Phe Ile 405 410 415		
Thr Ala Leu Glu Thr Leu Gln Ser Asn Arg Arg His Ser Ile Phe Phe 420 425 430		
Gln Lys Val Asn Leu Asn Glu Met Val Met Cys Leu Glu Asp Leu Ile 435 440 445		
Asn Tyr Phe Ser Gln Pro Glu Asp Asp Met Glu His Glu Glu Lys Gln 450 455 460		
Asn Arg Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu Glu 465 470 475 480		
Gly Val Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Val Asn Ile Ile 485 490 495		
Thr Ser Gln Gly Phe Leu Ala Ser Phe Leu Ala Gly Asp Glu Thr Gly 500 505 510		
Gln Ser Trp Asp Leu Ile Ser Thr Tyr Leu Tyr Gln Leu Leu Ala Ala 515 520 525		
Ile Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser Asn 530 535 540		
Arg Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Ser Glu 545 550 555 560		
Gly Ser Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro 565 570 575		
Glu Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Val Ile Ser 580 585 590		
Leu Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys 595 600 605		
Ser Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn 610 615 620		
Ile Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Leu 625 630 635 640		
Leu Val Asp His Val Ala Ser Ile Arg Pro Asn Ile Phe Val Gly Arg 645 650 655		
Val Asp Gly Ser Ser Met Tyr Gln Lys Trp Tyr Phe Glu Val Thr Met 660 665 670		
Asp His Ile Glu Gln Thr Thr His Met Met Pro His Leu Arg Ile Gly		

675					680					685					
Trp	Ala	Asn	Thr	Ser	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Lys	Lys
690						695					700				
Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	Tyr	Ser	Phe	Gly	Phe	Asp
705					710					715					720
Gly	Ala	Phe	Leu	Trp	Thr	Gly	Gly	Arg	Lys	Thr	Leu	Val	Val	Asp	Ala
				725					730					735	
Leu	Pro	Glu	Glu	Pro	Phe	Ile	Arg	Lys	Gly	Asp	Val	Ile	Gly	Val	Ala
			740					745					750		
Ile	Asp	Leu	Ser	Val	Pro	Ile	Ile	Thr	Phe	Thr	Phe	Asn	Gly	Val	Lys
		755					760					765			
Val	Arg	Gly	Ser	Phe	Arg	Asp	Phe	Asn	Leu	Asp	Gly	Met	Phe	Phe	Pro
	770					775					780				
Val	Met	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys	Arg	Phe	Leu	Phe	Gly	Gly
785					790					795					800
Asp	His	Gly	Arg	Leu	Lys	Phe	Ala	Pro	Pro	Met	Gly	Phe	Ser	Ala	Leu
				805					810					815	
Val	Gln	Cys	Leu	Met	Pro	Gln	Gln	Ile	Leu	Ser	Leu	Asp	Pro	Cys	Phe
			820					825					830		
Tyr	Phe	Gly	Asn	Leu	Ala	Lys	Asn	Val	Leu	Ala	Gly	Pro	Trp	Leu	Ile
		835					840					845			
Glu	Asp	Asp	Thr	Ala	Phe	Val	Pro	Lys	Pro	Val	Asp	Thr	Thr	Gly	Val
	850					855					860				
Thr	Leu	Pro	Ser	Ser	Val	Asp	Gln	Ile	Lys	Glu	Lys	Leu	Ala	Glu	Asn
865					870					875					880
Ile	His	Glu	Met	Trp	Ala	Leu	Asn	Lys	Ile	Glu	Ala	Gly	Trp	Ser	Trp
				885					890					895	
Gly	Glu	His	Arg	Asp	Asp	Tyr	His	Arg	Ile	His	Pro	Cys	Leu	Thr	His
			900					905					910		
Phe	Glu	Lys	Leu	Pro	Ala	Ala	Glu	Lys	Arg	Tyr	Asp	Asn	Gln	Leu	Ala
		915					920					925			
Val	Gln	Thr	Leu	Lys	Thr	Ile	Ile	Ser	Leu	Gly	Tyr	Tyr	Ile	Thr	Met
	930					935					940				
Asp	Lys	Pro	Pro	Ala	Arg	Ile	Arg	Pro	Val	Arg	Leu	Pro	Asn	Glu	Ile
945					950					955					960
Phe	Met	Gln	Gly	Asn	Gly	Tyr	Lys	Pro	Ala	Pro	Leu	Asp	Leu	Ser	Ala
				965					970					975	
Val	Thr	Leu	Thr	Pro	Lys	Leu	Glu	Glu	Leu	Val	Asp	Gln	Leu	Ala	Glu
			980					985					990		
Asn	Thr	His	Asn	Leu	Trp	Ala	Arg	Glu	Arg	Ile	Gln	Gln	Gly	Trp	Thr

995					1000					1005				
Tyr	Gly	Leu	Asn	Glu	Asp	Ser	Glu	Asn	His	Arg	Ser	Pro	His	Leu
1010						1015					1020			
Val	Pro	Tyr	Ala	Lys	Val	Asp	Glu	Ala	Ile	Lys	Lys	Ala	Asn	Arg
1025						1030					1035			
Asp	Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr	Leu	Leu	Val	Tyr	Gly	Tyr
1040						1045					1050			
Val	Leu	Asp	Pro	Pro	Thr	Gly	Glu	Gly	Thr	Glu	Ala	Leu	Leu	Ala
1055						1060					1065			
Glu	Ala	Gln	Arg	Leu	Lys	Phe	Ala	Gly	Phe	Arg	Thr	Tyr	Arg	Val
1070						1075					1080			
Glu	Arg	Asn	Tyr	Ala	Val	Thr	Ser	Gly	Lys	Trp	Tyr	Phe	Glu	Phe
1085						1090					1095			
Glu	Val	Leu	Thr	Ser	Gly	Pro	Met	Arg	Val	Gly	Trp	Ala	Arg	Ala
1100						1105					1110			
Asp	Cys	Tyr	Pro	Gly	Ala	Met	Leu	Gly	Ser	Glu	Asp	Thr	Ser	Trp
1115						1120					1125			
Ala	Phe	Asp	Gly	His	Asn	Val	Thr	Lys	Met	His	Ala	Gly	Ser	Ile
1130						1135					1140			
Glu	His	Phe	Gly	Val	Arg	Tyr	Glu	Ala	Gly	Asp	Val	Ile	Gly	Cys
1145						1150					1155			
Phe	Ile	Asp	Val	Lys	Glu	Gln	Thr	Ile	Ser	Phe	Ser	Leu	Asn	Gly
1160						1165					1170			
Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ala	Asp
1175						1180					1185			
Val	Thr	Ala	Glu	Gly	Val	Gly	Phe	Val	Pro	Ala	Cys	Thr	Leu	Gly
1190						1195					1200			
Val	Gly	Gln	Lys	Ala	Arg	Leu	Ile	Tyr	Gly	Gln	Asp	Val	Asp	Ser
1205						1210					1215			
Leu	Lys	Phe	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro
1220						1225					1230			
Phe	Cys	Val	Asn	Met	Arg	Arg	Pro	Val	Thr	His	Trp	Tyr	Thr	Lys
1235						1240					1245			
Asp	Gln	Pro	Ile	Phe	Glu	Asn	Thr	Glu	Glu	Met	Pro	Asp	Cys	Arg
1250						1255					1260			
Ile	Asp	Val	Thr	Arg	Ile	Pro	Gly	Gly	Ala	Asp	Thr	Pro	Pro	His
1265						1270					1275			
Leu	Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Lys	Ala	Asn
1280						1285					1290			
Trp	Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Thr	Cys	Met	Gly	Glu

1295	1300	1305
Phe Ile Ser Glu Gln Glu Lys 1310	Ala Arg Arg Trp 1315	Asp Glu Ile Lys 1320
Asn Arg Gln Tyr Arg Leu Met 1325	Arg Glu Ala Glu 1330	Ile Ala Ala Gln 1335
Met Gln Val Gln Thr Gln Ala 1340	Ala His Met Asp 1345	His Met Leu Lys 1350
Gly Gly Phe Asn Met Asn Asp 1355	Ile Lys Gly Leu 1360	Thr Arg Asn Phe 1365
Asp Glu His Ala Asp Ala Glu 1370	Ala Asp His Met 1375	Met Arg Gly Pro 1380
Asn Arg Pro Pro Arg Lys Gly 1385	Ser Leu Thr Arg 1390	Asn Ile Thr Phe 1395
Glu Thr Asp Met Ser Ala Ala 1400	Leu Asp Glu Met 1405	Gln Arg Ser Thr 1410
Ser Val Leu Asp Met Asn Gly 1415	Leu Gly Glu Glu 1420	Met Asp Asp Lys 1425
Lys Lys Arg Gly Arg Ser Pro 1430	Phe Lys Phe Phe 1435	Ser Lys Lys Ser 1440
Arg Asp Gln Ser Arg Glu Lys 1445	Met Gly Ala Arg 1450	Thr Leu Asp Thr 1455
Ser Leu Glu Arg Arg Asn Thr 1460	Val Ala His Gly 1465	Arg Asn Val Val 1470
Asn Gln Gln Met Thr Thr Arg 1475	Ala Pro Thr Leu 1480	Arg Leu Asn Asn 1485
Ala Glu Ile Pro Pro Ser Pro 1490	Val Pro Gln Gly 1495	Pro Lys Gln Leu 1500
Ser Gly Ser Asn Leu Gly Gln 1505	Gln Pro Val Glu 1510	Thr Ser Gly Asp 1515
Glu Met Phe Asp Ala Glu Cys 1520	Leu Lys Leu Ile 1525	Asn Glu Tyr Phe 1530
Tyr Gly Val Arg Ile Phe Pro 1535	Gly Gln Asp Pro 1540	Thr His Val Tyr 1545
Val Gly Trp Val Thr Thr Gln 1550	Tyr His Leu His 1555	Ser Arg Glu Phe 1560
Asn Lys Asn Lys Val Arg Arg 1565	Gly Ser Val Tyr 1570	Ile Glu Asp Asp 1575
Tyr Glu Met Ala Ile Glu Arg 1580	Ile Asp Arg Gln 1585	Ser Cys Tyr Val 1590
Val Arg Ala Asp Glu Leu Phe	Asn Glu Val Thr	Gln Asp Ala Ser

1595		1600		1605
Gly Lys	Gly Ala Ser Gln	Gly Met Phe Val Gly	Cys Phe Val Asp	
1610		1615	1620	
Thr Ala	Thr Gly Ile Ile	Arg Phe Thr Cys Glu	Gly Lys Asp Thr	
1625		1630	1635	
Ser His	Arg Trp Met Met	Glu Pro Asp Thr Lys	Leu Phe Pro Ala	
1640		1645	1650	
Ile Phe	Val Glu Ala Thr	Ser Lys Glu Ile Leu	Gln Ile Glu Leu	
1655		1660	1665	
Gly Arg	Thr Pro Thr Thr	Leu Pro Leu Ser Ala	Ala Val Leu Pro	
1670		1675	1680	
Thr Ser	Asp Lys His Ile	Asn Pro Gln Ser Pro	Pro Arg Leu Lys	
1685		1690	1695	
Val Gln	Cys Leu Arg Pro	His Gln Trp Ala Arg	Val Pro Asn Thr	
1700		1705	1710	
Ala Leu	Gln Val His Ala	Leu Lys Leu Ser Asp	Val Arg Gly Trp	
1715		1720	1725	
Ser Met	Leu Cys Glu Asp	Pro Val Ser Met Leu	Ala Leu Arg Ile	
1730		1735	1740	
Pro Glu	Glu Asp Arg Cys	Ile Asp Ile Leu Glu	Leu Ile Glu Met	
1745		1750	1755	
Asp Lys	Leu Leu Ser Phe	His Ala His Ser Leu	Thr Leu Tyr Ala	
1760		1765	1770	
Ala Leu	Cys Tyr Gln Ser	Asn Tyr Arg Ala Ala	His Ala Leu Cys	
1775		1780	1785	
Gln His	Val Asp Gln Lys	Gln Leu Leu Tyr Ala	Ile Arg Ser Glu	
1790		1795	1800	
Tyr Met	Ser Gly Pro Leu	Arg Gln Gly Phe Tyr	Asp Leu Leu Ile	
1805		1810	1815	
Ala Leu	His Leu Glu Ser	His Ala Thr Thr Met	Glu Val Cys Lys	
1820		1825	1830	
Asn Glu	Tyr Ile Thr Pro	Leu Gly Ala Glu Leu	Lys Glu Leu Tyr	
1835		1840	1845	
Ser Asp	Glu Glu Met Gln	His Ser Leu Arg Ser	Leu Val Thr Glu	
1850		1855	1860	
Ser Val	Arg Pro Gln Leu	Arg Met Thr Glu Ile	Thr Glu Pro Ile	
1865		1870	1875	
Pro Asp	Ile Asp Gln Leu	Tyr Ser Pro Lys Phe	Pro Leu Glu Val	
1880		1885	1890	
Val Arg	Gln Phe Val Met	Glu Ala Leu Lys Asp	Ala Val Glu Ile	

1895				1900				1905						
Asn	Gln	Val	His	Asn	Arg	Asp	Pro	Ile	Gly	Trp	Thr	Asn	Glu	Asn
1910						1915					1920			
Leu	Phe	Leu	Pro	Leu	Ile	Lys	Leu	Thr	Asp	Arg	Leu	Leu	Leu	Val
1925						1930					1935			
Gly	Val	Leu	Thr	Asp	Glu	Asp	Val	Gln	Arg	Leu	Leu	Val	Met	Ile
1940						1945					1950			
Asp	Pro	Glu	Thr	Trp	Asp	Gln	Ala	Phe	Glu	Arg	Glu	Gly	Lys	Asp
1955						1960					1965			
Glu	His	Arg	Lys	Gly	Leu	Leu	Thr	Met	Lys	Met	Ala	Glu	Gly	Ala
1970						1975					1980			
Lys	Leu	Gln	Met	Arg	Tyr	Leu	Leu	His	His	Leu	Tyr	Asp	Thr	Gln
1985						1990					1995			
Leu	Arg	His	Arg	Val	Glu	Ser	Ile	Ile	Ala	Phe	Ser	His	Asp	Phe
2000						2005					2010			
Val	Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Ile	Glu	Ile
2015						2020					2025			
Lys	Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Lys
2030						2035					2040			
Glu	Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Gln	Ile	Leu	Cys
2045						2050					2055			
Phe	Lys	Asn	Leu	Glu	Pro	Asp	Asp	Gln	Asp	Asn	Cys	Thr	Cys	Gly
2060						2065					2070			
Leu	Glu	Leu	Arg	Gly	Arg	Leu	Gly	Asp	Phe	His	Asp	Ser	Leu	Met
2075						2080					2085			
Gln	Lys	Val	Ser	Leu	Asn	Ala	Leu	Gln	Glu	Pro	Asp	Gly	Val	Glu
2090						2095					2100			
Gly	Thr	Ala	Ile	Glu	Glu	Val	Lys	Thr	Gly	Pro	Ile	Thr	Lys	Ile
2105						2110					2115			
Tyr	Asn	Phe	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Gly	Pro	Lys
2120						2125					2130			
Glu	Val	Glu	Glu	Pro	Glu	Lys	Lys	Thr	Pro	Glu	Glu	Val	Phe	Arg
2135						2140					2145			
Lys	Val	Leu	Ile	Lys	Thr	Ile	Val	Ser	Trp	Ala	Glu	Glu	Ser	Gln
2150						2155					2160			
Ile	Glu	Asn	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Leu
2165						2170					2175			
Arg	Gln	Tyr	Asp	Thr	Val	Gly	Glu	Leu	Val	Arg	Ala	Leu	Glu	Lys
2180						2185					2190			
Thr	Tyr	Val	Ile	Asn	Thr	Arg	Ala	Arg	Asp	Asp	Val	Ala	Glu	Met

2195						2200						2205					
Trp	Val	Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met			
2210						2215						2220					
Ser	Gln	Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu			
2225						2230						2235					
Val	Asn	Asn	Ala	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Ile			
2240						2245						2250					
Leu	Arg	Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Leu			
2255						2260						2265					
Gly	Arg	Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Thr	Gln	Ser	Glu			
2270						2275						2280					
Val	Ala	Glu	Gly	Ala	Pro	Ser	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu			
2285						2290						2295					
Met	Val	Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr			
2300						2305						2310					
Gly	Arg	Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu			
2315						2320						2325					
Leu	Asp	Asn	Ala	Asn	Ile	Leu	Leu	Ala	Arg	Pro	Ser	Leu	Arg	Gly			
2330						2335						2340					
Ser	Thr	Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr			
2345						2350						2355					
Glu	Leu	Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala			
2360						2365						2370					
Val	Tyr	Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Val			
2375						2380						2385					
Glu	Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu			
2390						2395						2400					
Arg	Tyr	Pro	Asp	Phe	Leu	Arg	Tyr	Cys	Val	Trp	Val	Asn	Gly	Glu			
2405						2410						2415					
Ser	Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg			
2420						2425						2430					
Arg	Pro	Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly			
2435						2440						2445					
Leu	Phe	Arg	Ala	Ile	Val	Glu	Ala	Asn	Arg	Met	Ser	Glu	Arg	Ile			
2450						2455						2460					
Ser	Asp	Arg	Cys	Lys	Met	Gln	Asp	Glu	Ala	Glu	Gly	Thr	Ile	Ala			
2465						2470						2475					
Gly	Leu	Asn	Phe	Thr	His	Pro	Leu	Pro	Glu	Gly	Glu	Glu	Asp	Glu			
2480						2485						2490					
Asp	Tyr	Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr			

2495	2500	2505
Leu Val Asp Leu Leu Gly Arg Cys Ala Pro Asp Ala Ser Val Ile 2510 2515 2520		
Glu Gln Gly Lys Asn Glu Ser Leu Arg Ala Arg Ala Ile Leu Arg 2525 2530 2535		
Ser Leu Val Pro Leu Glu Asp Leu Gln Gly Val Leu Ser Leu Lys 2540 2545 2550		
Phe Thr Leu Ser Gln Thr Ala Pro Gly Glu Glu Lys Pro Lys Ser 2555 2560 2565		
Asp Met Pro Ser Gly Leu Leu Pro Asn Asn Lys Gln Ser Ile Val 2570 2575 2580		
Leu Phe Leu Glu Arg Val Tyr Gly Ile Glu Ala Gln Asp Leu Phe 2585 2590 2595		
Tyr Arg Leu Leu Glu Asp Ala Phe Leu Pro Asp Leu Arg Thr Ala 2600 2605 2610		
Thr Ile Leu Asp Lys Ser Asp Gly Ser Glu Ser Asp Met Ala Leu 2615 2620 2625		
Ala Met Asn Arg Tyr Ile Gly Asn Ser Ile Leu Pro Leu Leu Ile 2630 2635 2640		
Lys His Ser Lys Phe Tyr Asn Glu Ala Glu Asn Tyr Ala Ser Leu 2645 2650 2655		
Leu Asp Ala Thr Leu His Thr Val Tyr Arg Leu Ser Lys Asn Arg 2660 2665 2670		
Met Leu Thr Lys Gly Gln Arg Glu Ala Val Ser Asp Phe Leu Val 2675 2680 2685		
Ala Leu Thr Ser Gln Met Gln Pro Ala Met Leu Leu Lys Leu Leu 2690 2695 2700		
Arg Lys Leu Thr Val Asp Val Ser Lys Leu Ser Glu Tyr Thr Thr 2705 2710 2715		
Val Ala Leu Arg Leu Leu Thr Leu His Phe Asp Arg Cys Ala Lys 2720 2725 2730		
Tyr Tyr Gly Ser Thr Gln Gly Gln Gly Ser Tyr Gly Ala Ser Ser 2735 2740 2745		
Asp Glu Glu Lys Arg Leu Thr Met Leu Leu Phe Ser Asn Ile Phe 2750 2755 2760		
Asp Ser Leu Ser Asn Met Asp Tyr Asp Pro Glu Leu Phe Gly Lys 2765 2770 2775		
Ala Leu Pro Cys Leu Ile Ala Ile Gly Cys Ala Leu Pro Pro Asp 2780 2785 2790		
Tyr Ser Leu Ser Lys Asn Thr Asp Glu Asp Tyr Tyr Gly Arg Gln		



2795					2800					2805				
Met Gly Ala Pro Asp Gln Pro Gln Tyr Met Pro Asn Pro Ile Asp	2810				2815					2820				
Thr Asn Asn Val His Leu Asp Asn Asp Leu Asn Ser Leu Val Gln	2825				2830					2835				
Lys Phe Ser Glu His Tyr His Asp Ala Trp Ala Ser Arg Arg Leu	2840				2845					2850				
Glu Gly Gly Trp Thr Tyr Gly Asp Ile Arg Ser Asp Asn Asp Arg	2855				2860					2865				
Lys His Pro Arg Leu Lys Pro Tyr Asn Met Leu Ser Glu Tyr Glu	2870				2875					2880				
Arg Glu Arg Tyr Arg Asp Pro Val Arg Glu Cys Leu Lys Gly Leu	2885				2890					2895				
Leu Ala Ile Gly Trp Thr Val Glu His Ser Glu Val Glu Val Pro	2900				2905					2910				
Leu Asn His Arg Gly Ser Thr Arg Arg Gln Ser Lys Pro Gln Ile	2915				2920					2925				
Asn Glu Gly Ser Pro Phe Asn Tyr Asn Pro His Pro Val Asp Met	2930				2935					2940				
Ser Asn Leu Thr Leu Ser Arg Glu Met Gln Asn Met Ala Glu Arg	2945				2950					2955				
Leu Ala Glu Asn Ser His Asp Ile Trp Ala Lys Lys Lys Asn Glu	2960				2965					2970				
Glu Leu Asn Gly Cys Gly Gly Val Ile His Pro Gln Leu Val Pro	2975				2980					2985				
Tyr Asp Leu Leu Thr Asp Lys Glu Lys Lys Lys Asp Arg Glu Arg	2990				2995					3000				
Ser Gln Glu Phe Leu Lys Tyr Met Gln Tyr Gln Gly Tyr Lys Leu	3005				3010					3015				
His Lys Pro Ser Lys Gly Gly Ala Val Glu Glu Gly Gly Ala Thr	3020				3025					3030				
Gln Ala Ala Val Glu Leu Arg Phe Ser Tyr Ser Leu Leu Glu Lys	3035				3040					3045				
Leu Ile Gln Tyr Leu Asp Arg Ala Thr Ile Asn Met Lys Leu Leu	3050				3055					3060				
Lys Pro Ser Thr Thr Phe Ser Arg Arg Ser Ser Phe Lys Thr Ala	3065				3070					3075				
Thr Arg Asp Ile Lys Phe Phe Ser Lys Val Val Leu Pro Leu Met	3080				3085					3090				
Glu Lys Tyr Phe Ser Thr His Arg Asn Tyr Phe Ile Ala Ile Ala														

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Met Val Ala Ser Ile Phe Cys Lys Leu Ala Ala Leu Leu Arg Asn				
3125		3130		3135
Arg Leu Ser Ala Phe Gly Pro Asp Val Arg Ile Thr Val Arg Cys				
3140		3145		3150
Leu Gln Val Leu Val Lys Gly Ile Asp Ala Arg Thr Leu Thr Lys				
3155		3160		3165
Asn Cys Pro Glu Phe Ile Arg Thr Ser Met Leu Thr Phe Phe Asn				
3170		3175		3180
Gln Thr Ser Asp Asp Leu Gly Asn Thr Ile Leu Asn Leu Gln Asp				
3185		3190		3195
Gly Lys Tyr Ser His Leu Arg Gly Thr His Leu Lys Thr Ser Thr				
3200		3205		3210
Ser Leu Gly Tyr Val Asn Gln Val Val Leu Pro Val Leu Thr Ala				
3215		3220		3225
Met Phe Asp His Leu Ala Ala Cys Asp Tyr Gly Ser Asp Leu Leu				
3230		3235		3240
Leu Asp Glu Ile Gln Val Ala Ser Tyr Lys Ile Leu Ala Ala Leu				
3245		3250		3255
Tyr His Leu Gly Thr Asp Gly Thr Leu Thr His Asp Arg Lys Tyr				
3260		3265		3270
Leu Lys Thr Glu Ile Glu Arg His Arg Pro Ala Leu Gly Ser Cys				
3275		3280		3285
Leu Gly Ala Tyr Ser Ser Cys Phe Pro Val Ala Phe Leu Glu Pro				
3290		3295		3300
His Leu Asn Lys His Asn Gln Tyr Ser Leu Leu Asn Arg Ile Ala				
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Asp His Ser Leu Glu Ala Gln Asp Ile Met Val Lys Met Glu Ser				
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Cys Met Pro Asn Leu Glu Thr Ile Leu Ala Glu Val Asp Gln Phe				
3335		3340		3345
Val Glu Ser Asp Lys Thr Tyr Asn Asp Ala Pro His Ile Ile Asp				
3350		3355		3360
Val Ile Leu Pro Leu Leu Cys Ala Tyr Leu Pro Phe Trp Trp Ser				
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Gln Gly Pro Asp Asn Val Ser Pro Thr Ser Gly Asn His Val Thr				
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Met Val Thr Ala Asp His Met Asn Pro Leu Leu Arg Asn Val Leu				

3395		3400		3405
Lys Met Ile Lys Lys Asn Ile Gly Asn Asp Asn Ala Pro Trp Met				
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Thr Arg Ile Ala Ala Tyr Thr Gln Gln Ile Ile Ile Asn Thr Ser				
3425		3430		3435
Glu Glu Leu Leu Lys Asp Pro Phe Leu Pro Leu Ala Glu Arg Val				
3440		3445		3450
Lys Lys Arg Thr Glu Asn Met Leu His Lys Glu Asp Ser Met Arg				
3455		3460		3465
Gly Phe Ile Lys Ser Ala Thr Asp Asp Thr Ser Gln Val Glu Thr				
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Gln Leu Gln Glu Asp Trp Asn Leu Leu Val Arg Asp Ile Tyr Ser				
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Phe Tyr Pro Leu Leu Ile Lys Tyr Val Asp Leu Gln Arg Asn His				
3500		3505		3510
Trp Leu Lys Asp Asn Ile Pro Glu Ala Glu Glu Leu Tyr Asn His				
3515		3520		3525
Val Ala Glu Ile Phe Asn Ile Trp Ser Lys Ser Gln Tyr Phe Leu				
3530		3535		3540
Lys Glu Glu Gln Asn Phe Ile Ser Ala Asn Glu Ile Asp Asn Met				
3545		3550		3555
Ala Leu Ile Met Pro Thr Ala Thr Arg Arg Ser Ala Ile Ser Glu				
3560		3565		3570
Gly Ala Pro Ala Val Gly Gly Lys Val Lys Lys Lys Lys Lys Asn				
3575		3580		3585
Arg Asp Lys Lys Arg Asp Lys Asp Lys Glu Val Gln Ala Ser Leu				
3590		3595		3600
Met Val Ala Cys Leu Lys Arg Leu Leu Pro Val Gly Leu Asn Leu				
3605		3610		3615
Phe Ala Gly Arg Glu Gln Glu Leu Val Gln His Cys Lys Asp Arg				
3620		3625		3630
Tyr Leu Lys Lys Met Pro Glu Tyr Asp Val Ile Glu Phe Ala Arg				
3635		3640		3645
Asn Gln Leu Thr Leu Pro Asp Lys Leu Asp Pro Ser Asp Glu Met				
3650		3655		3660
Ser Trp Gln His Tyr Leu Tyr Ser Lys Leu Gly Lys Thr Glu Glu				
3665		3670		3675
Pro Val Asp Glu Gln Ala Leu Glu Lys Ala Asn Val Asn Ser Asn				
3680		3685		3690
Glu Lys Gly Lys Asp Lys Thr Gln Glu Thr Val Asp Arg Ile Val				

3695		3700		3705
Ala Met	Ala Lys Val Leu Phe	Gly Leu His Met	Ile Asp His Pro	
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Gln Gln	Gln Ser Lys Asn Val	Tyr Arg Ser Val	Val Ser Ile Gln	
3725		3730	3735	
Arg Lys	Arg Ala Val Ile Ala	Cys Phe Arg Gln	Thr Ser Leu His	
3740		3745	3750	
Ser Leu	Pro Arg His Arg Ala	Cys Asn Ile Phe	Ala Arg Ser Tyr	
3755		3760	3765	
Tyr Glu	Gln Trp Leu Gln Glu	Glu Asn Val Gly	Gln Glu Val Met	
3770		3775	3780	
Val Glu	Asp Leu Thr Gln Thr	Phe Glu Asp Ser	Glu Lys Ser Lys	
3785		3790	3795	
Lys Glu	Gly Glu Glu Thr Asp	Ser Lys Pro Asp	Pro Leu Thr Gln	
3800		3805	3810	
Leu Val	Thr Thr Phe Cys Arg	Gly Ala Met Thr	Glu Arg Ser Gly	
3815		3820	3825	
Ala Leu	Gln Glu Asp Leu Leu	Tyr Met Ser Tyr	Ala Gln Ile Ala	
3830		3835	3840	
Ala Lys	Ser Thr Gly Lys Glu	Glu Glu Glu Gly	Gly Asp Glu Glu	
3845		3850	3855	
Gly Gly	Glu Gly Gly Glu Glu	Ala Glu Gly Thr	Ser Ile His Glu	
3860		3865	3870	
Gln Glu	Met Glu Lys Gln Lys	Leu Leu Phe His	Gln Ala Arg Leu	
3875		3880	3885	
Ser Asn	Arg Gly Val Ala Glu	Met Val Leu Leu	His Val Ser Ala	
3890		3895	3900	
Ser Lys	Gly Ile Pro Ser Glu	Met Val Met Thr	Thr Leu Asn Leu	
3905		3910	3915	
Gly Ile	Ala Ile Leu Arg Gly	Gly Asn Ile Asp	Ile Gln Met Gly	
3920		3925	3930	
Met Leu	Asn His Leu Lys Glu	Lys Lys Asp Val	Gly Phe Phe Thr	
3935		3940	3945	
Ser Ile	Ala Gly Leu Met Asn	Ser Cys Ser Val	Leu Asp Leu Asp	
3950		3955	3960	
Ala Phe	Glu Arg Asn Thr Lys	Ala Glu Gly Leu	Gly Val Gly Ser	
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Glu Gly	Ala Ala Gly Glu Lys	Asn Met His Asp	Ala Glu Phe Thr	
3980		3985	3990	
Cys Ala	Leu Phe Arg Phe Ile	Gln Leu Thr Cys	Glu Gly His Asn	

3995					4000					4005				
Leu	Glu	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala	Gly	Asn	Thr	Thr
4010						4015					4020			
Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr	Leu	Leu	Arg	Leu
4025						4030					4035			
Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser	Ser	Lys	Glu
4040						4045					4050			
Ile	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe	Lys	Ala	Ile	Glu
4055						4060					4065			
Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Thr	Glu	Val	Ile	Gln	Gly
4070						4075					4080			
Pro	Cys	Thr	Leu	Asn	Gln	Gln	Ala	Leu	Ala	His	Ser	Arg	Leu	Trp
4085						4090					4095			
Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser	His	Met	Gln	Asp
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Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu	Leu	Lys	Glu	Leu
4115						4120					4125			
Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Thr	Met	Met	Leu	Ser	Met	Leu
4130						4135					4140			
Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln	Met	Val	Asp
4145						4150					4155			
Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	Leu	Ile	Leu	Lys	Tyr
4160						4165					4170			
Phe	Asp	Met	Phe	Leu	Lys	Leu	Ala	Asp	Leu	Ile	Glu	Ser	Pro	Ser
4175						4180					4185			
Phe	His	Glu	Val	Asp	Met	Lys	Asn	Glu	Gly	Trp	Val	Thr	Pro	Lys
4190						4195					4200			
Asp	Phe	Arg	Glu	Lys	Met	Glu	Gln	Ser	Lys	Asn	Tyr	Thr	Pro	Glu
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Glu	Met	Asp	Phe	Leu	Leu	Ala	Cys	Cys	Glu	Arg	Asn	His	Glu	Gly
4220						4225					4230			
Lys	Ile	Asp	Tyr	Arg	Ala	Phe	Val	Glu	His	Phe	His	Glu	Pro	Ser
4235						4240					4245			
Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu	Thr	Asn	Leu	Ser
4250						4255					4260			
Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala	Arg	Phe	Leu	Glu	Thr
4265						4270					4275			
Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	Glu	Pro	Phe	Leu	Gly	Arg	Ile
4280						4285					4290			
Glu	Ile	Leu	Gly	Ser	Ser	Lys	Arg	Ile	Glu	Arg	Val	Tyr	Phe	Glu

4295					4300					4305				
Ile Lys Asp Ser Asn Ile	Glu Gln Trp Glu Lys Pro	Gln Ile Arg	4310	4315	4320									
Glu Ser Lys Arg Ala Phe	Phe Tyr Ser Ile Val Thr	Glu Gly Gly	4325	4330	4335									
Asp Lys Glu Lys Leu Glu	Ala Phe Val Asn Phe Cys	Glu Asp Ala	4340	4345	4350									
Ile Phe Glu Met Thr His	Ala Ser Gly Leu Met Ala	Thr Asp Asp	4355	4360	4365									
Gly Gly Gly Asn Val Lys	Arg Asp Thr Ala Tyr Ser	Ser Tyr Met	4370	4375	4380									
Ser Glu Glu Glu Glu Glu	Arg Ala Ala Arg Asp Pro	Ile Arg Arg	4385	4390	4395									
Thr Ile Thr Ala Val Lys	Glu Gly Leu Lys Phe Gly	Val His Met	4400	4405	4410									
Leu Ser Pro Ala Asn Ile	Lys His Gln Ile Gly Val	Met Gln Thr	4415	4420	4425									
Lys Ser Ile Pro Glu Leu	Ile Val Gly Phe Phe Lys	Ile Ile Phe	4430	4435	4440									
Tyr Ile Phe Tyr Tyr Thr	Gly Tyr Ala His Phe Cys	Val Val Arg	4445	4450	4455									
Tyr Ile Phe Gly Ile Leu	Leu Asn Leu Met Arg Gly	Pro Ala Pro	4460	4465	4470									
Glu Gln Glu Glu Glu Pro	Val Val Glu Glu Glu Thr	Phe Gly Arg	4475	4480	4485									
Ala Leu Pro Pro Leu Ser	Leu Glu Glu Pro Pro Gly	Thr Val Gln	4490	4495	4500									
Ala Phe Gly Leu Asp Ile	Asn Lys Glu Glu Asn Gly	Met Tyr Lys	4505	4510	4515									
Val Val Val His Glu Ser	Pro Ala Asn Ser Ser Met	Glu Glu Gly	4520	4525	4530									
Gly Glu Ser Ser Pro Glu	Asp Gly Ala Ala Ala Ser	Gly Glu Leu	4535	4540	4545									
Val Glu Gly Glu Pro His	Gln Gly Pro Ile Ser Ile	Val Asp Leu	4550	4555	4560									
Leu Gly Gly Glu Ala Ala	Lys Lys Ala Ala Gln Glu	Arg Gln Glu	4565	4570	4575									
Ala Gln Lys Ala Gln Glu	Ala Ala Met Ala Ser Ile	Glu Ala Glu	4580	4585	4590									
Ala Lys Lys Ser Ser Ser	Ala Pro Gln Glu Thr Pro	Ala Val His												

4595	4600	4605
Gln Ile Asp Phe Ser Gln Tyr Thr His Arg Ala Val Ser Phe Leu		
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Ala Arg Asn Phe Tyr Asn Leu Lys Tyr Val Ala Leu Val Leu Ala		
4625	4630	4635
Phe Ser Ile Asn Phe Met Leu Leu Phe Tyr Lys Val Thr Ser Phe		
4640	4645	4650
Thr Glu Glu Ala Asp Ser Ser Ala Glu Glu Glu Leu Ile Leu Gly		
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Ser Gly Pro Gly Gly Gly Ala Asp Ile Thr Gly Ser Gly Phe Gly		
4670	4675	4680
Gly Ser Gly Asp Gly Gly Ser Gly Asp Gly Glu Met Glu Asp Glu		
4685	4690	4695
Ile Pro Glu Leu Val His Val Asp Glu Asp Phe Phe Tyr Met Glu		
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His Val Leu Arg Ile Ala Ala Cys Leu His Ser Leu Val Ser Leu		
4715	4720	4725
Ala Met Leu Ile Ala Tyr Tyr His Leu Lys Val Pro Leu Ala Ile		
4730	4735	4740
Phe Lys Arg Glu Lys Glu Ile Ala Arg Arg Leu Glu Phe Glu Gly		
4745	4750	4755
Leu Phe Ile Ala Glu Gln Pro Glu Asp Asp Asp Phe Lys Ser His		
4760	4765	4770
Trp Asp Lys Leu Val Ile Ser Ala Lys Ser Phe Pro Val Asn Tyr		
4775	4780	4785
Trp Asp Lys Phe Val Lys Lys Lys Val Arg Gln Lys Tyr Ser Glu		
4790	4795	4800
Thr Tyr Asp Phe Asp Ser Ile Ser Asn Leu Leu Gly Met Glu Lys		
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Ser Thr Phe Ala Ala Gln Glu Ser Glu Glu Thr Gly Ile Phe Lys		
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Tyr Ile Met Asn Ile Asp Trp Arg Tyr Gln Val Trp Lys Ala Gly		
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Val Thr Phe Thr Asp Asn Ala Phe Leu Tyr Ser Leu Trp Tyr Phe		
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Ser Phe Ser Val Met Gly Asn Phe Asn Asn Phe Phe Phe Ala Ala		
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His Leu Leu Asp Val Ala Val Gly Phe Lys Thr Leu Arg Thr Ile		
4880	4885	4890
Leu Gln Ser Val Thr His Asn Gly Lys Gln Leu Val Leu Thr Val		

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Met Leu Leu Thr Ile Ile	Val Tyr Ile Tyr Thr	Val Ile Ala Phe
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Asn Phe Phe Arg Lys Phe	Tyr Ile Gln Glu Glu	Asp Glu Glu Val
4925	4930	4935
Asp Lys Lys Cys His Asp	Met Leu Thr Cys Phe	Val Phe His Leu
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Tyr Lys Gly Ala Arg Ala	Gly Gly Gly Ile Gly	Asp Glu Ile Gly
4955	4960	4965
Asp Pro Asp Gly Asp Asp	Tyr Glu Val Tyr Arg	Ile Ile Phe Asp .
4970	4975	4980
Ile Thr Phe Phe Phe Phe	Val Ile Ile Ile Leu	Leu Ala Ile Ile
4985	4990	4995
Gln Gly Leu Ile Ile Asp	Ala Phe Gly Glu Leu	Arg Asp Gln Leu
5000	5005	5010
Glu Ser Val Lys Asp Asn	Met Glu Ser Asn Cys	Phe Ile Cys Gly
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Met Gly Lys Asp Phe Phe	Asp Ile Val Pro His	Gly Phe Asp Thr
5030	5035	5040
His Val Gln Lys Glu His	Asn Leu Ala Asn Tyr	Met Phe Phe Leu
5045	5050	5055
Met His Leu Ile Asn Lys	Pro Asp Thr Glu Tyr	Thr Gly Gln Glu
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Thr Tyr Val Trp Asn Met	Tyr Gln Gln Arg Ser	Trp Asp Phe Phe
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20

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<220>  
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20

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38

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20

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<210> 32

<211> 27

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27

<210> 33

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27

<210> 34

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<223> PCR primer G-F1

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26

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25

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25

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29

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&lt;212&gt; PRT

<213> *Drosophila melanogaster*

&lt;400&gt; 56

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Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu
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Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe
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Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr
65          70          75          80

Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr
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Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met
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Tyr Leu Ala Cys Leu Ser Thr Ser Ser Asn Asp Lys Leu Ser Phe
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Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr
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145          150          155          160

Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His
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Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val
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Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys
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Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly
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Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Gly Arg Glu Ala Gly
225          230          235          240

Gln Asn Ile Val Ile Tyr Glu Gly Gly Val Val Met Ala Gln Ala Arg
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Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Thr Gly Gly Phe
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Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Ile Thr Thr Gly Arg
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Tyr Leu Gly Val Asn Asp Ser Asn Glu Leu Ile Leu Val Lys Lys Glu
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 Ser Leu Trp Leu Ser Tyr Lys Ser Tyr Glu Thr Lys Lys Lys Gly Val  
 355 360 365  
 Gly Lys Val Glu Glu Lys Gln Ala Ile Leu His Glu Glu Gly Lys Met  
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 Asp Asp Cys Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser Lys Thr  
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 420 425 430  
 Lys Val Asn Leu Asn Glu Met Val Met Cys Leu Glu Asp Leu Ile Asn  
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 Tyr Phe Ser Gln Pro Glu Asp Asp Met Glu His Glu Glu Lys Gln Asn  
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 595 600 605  
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Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Leu Leu  
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 850 855 860  
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 His Glu Met Trp Ala Leu Asn Lys Ile Glu Ala Gly Trp Ser Trp Gly  
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175

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Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Lys	Glu	Phe
2045						2050					2055			
Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Gln	Ile	Leu	Cys	Phe	Lys
2060						2065					2070			
Asn	Leu	Glu	Pro	Asp	Asp	Gln	Asp	Asn	Cys	Thr	Cys	Gly	Leu	Glu
2075						2080					2085			
Leu	Arg	Gly	Arg	Leu	Gly	Asp	Phe	His	Asp	Ser	Leu	Met	Gln	Lys
2090						2095					2100			
Val	Ser	Leu	Asn	Ala	Leu	Gln	Glu	Pro	Asp	Gly	Val	Glu	Gly	Thr
2105						2110					2115			
Ala	Ile	Glu	Glu	Val	Lys	Thr	Gly	Pro	Ile	Thr	Lys	Ile	Tyr	Asn
2120						2125					2130			
Phe	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Gly	Pro	Lys	Glu	Val
2135						2140					2145			

Glu 2150	Glu	Pro	Glu	Lys	Lys	Thr 2155	Pro	Glu	Glu	Val	Phe 2160	Arg	Lys	Val
Leu 2165	Ile	Lys	Thr	Ile	Val	Ser 2170	Trp	Ala	Glu	Glu	Ser 2175	Gln	Ile	Glu
Asn 2180	Pro	Lys	Leu	Val	Arg	Glu 2185	Met	Phe	Ser	Leu	Leu 2190	Leu	Arg	Gln
Tyr 2195	Asp	Thr	Val	Gly	Glu	Leu 2200	Val	Arg	Ala	Leu	Glu 2205	Lys	Thr	Tyr
Val 2210	Ile	Asn	Thr	Arg	Ala	Arg 2215	Asp	Asp	Val	Ala	Glu 2220	Met	Trp	Val
Gly 2225	Leu	Ser	Gln	Ile	Arg	Ala 2230	Leu	Leu	Pro	Val	Gln 2235	Met	Ser	Gln
Glu 2240	Glu	Glu	Glu	Leu	Met	Arg 2245	Lys	Arg	Leu	Trp	Lys 2250	Leu	Val	Asn
Asn 2255	Ala	Thr	Phe	Phe	Gln	His 2260	Pro	Asp	Leu	Ile	Arg 2265	Ile	Leu	Arg
Val 2270	His	Glu	Asn	Val	Met	Ala 2275	Val	Met	Met	Asn	Thr 2280	Ile	Gly	Arg
Arg 2285	Ala	Gln	Ala	Gln	Ser	Asp 2290	Ala	Pro	Thr	Gln	Ser 2295	Glu	Val	Ala
Glu 2300	Gly	Ala	Pro	Ser	Lys	Glu 2305	Lys	Asp	Thr	Ser	His 2310	Glu	Met	Val
Val 2315	Ala	Cys	Cys	Arg	Phe	Leu 2320	Cys	Tyr	Phe	Cys	Arg 2325	Thr	Gly	Arg
Gln 2330	Asn	Gln	Lys	Ala	Met	Phe 2335	Asp	His	Phe	Asp	Phe 2340	Leu	Leu	Asp
Asn 2345	Ala	Asn	Ile	Leu	Leu	Ala 2350	Arg	Pro	Ser	Leu	Arg 2355	Gly	Ser	Thr
Pro 2360	Leu	Asp	Val	Ala	Tyr	Ser 2365	Ser	Leu	Met	Glu	Asn 2370	Thr	Glu	Leu
Ala 2375	Leu	Ala	Leu	Arg	Glu	His 2380	Tyr	Leu	Glu	Lys	Ile 2385	Ala	Val	Tyr
Leu 2390	Ser	Arg	Cys	Gly	Leu	Gln 2395	Ser	Asn	Ser	Glu	Leu 2400	Val	Glu	Lys
Gly 2405	Tyr	Pro	Asp	Leu	Gly	Trp 2410	Asp	Pro	Val	Glu	Gly 2415	Glu	Arg	Tyr
Leu 2420	Asp	Phe	Leu	Arg	Tyr	Cys 2425	Val	Trp	Val	Asn	Gly 2430	Glu	Ser	Val
Glu 2435	Glu	Asn	Ala	Asn	Leu	Val 2440	Ile	Arg	Leu	Leu	Ile 2445	Arg	Arg	Pro



Glu Cys	Leu Gly	Pro Ala	Leu	Arg Gly	Glu Gly	Glu	Gly Leu	Phe
2450			2455			2460		
Arg Ala	Ile Val	Glu Ala	Asn	Arg Met	Ser Glu	Arg	Ile Ser	Asp
2465			2470			2475		
Arg Cys	Lys Met	Gln Asp	Glu	Ala Glu	Gly Thr	Ile	Ala Gly	Leu
2480			2485			2490		
Asn Phe	Thr His	Pro Leu	Pro	Glu Gly	Glu Glu	Asp	Glu Asp	Tyr
2495			2500			2505		
Ile Asp	Thr Gly	Ala Ala	Ile	Leu Asn	Phe Tyr	Cys	Thr Leu	Val
2510			2515			2520		
Asp Leu	Leu Gly	Arg Cys	Ala	Pro Asp	Ala Ser	Val	Ile Glu	Gln
2525			2530			2535		
Gly Lys	Asn Glu	Ser Leu	Arg	Ala Arg	Ala Ser	Leu	Arg Ser	Leu
2540			2545			2550		
Val Pro	Leu Glu	Asp Leu	Gln	Gly Val	Leu Ser	Leu	Lys Phe	Thr
2555			2560			2565		
Leu Ser	Gln Thr	Ala Pro	Gly	Glu Glu	Lys Pro	Lys	Ser Asp	Met
2570			2575			2580		
Pro Ser	Gly Leu	Leu Pro	Asn	Asn Lys	Gln Ser	Ile	Val Leu	Phe
2585			2590			2595		
Leu Glu	Arg Val	Tyr Gly	Ile	Glu Ala	Gln Asp	Leu	Phe Tyr	Arg
2600			2605			2610		
Leu Leu	Glu Asp	Ala Phe	Leu	Pro Asp	Leu Arg	Thr	Ala Thr	Ile
2615			2620			2625		
Leu Asp	Lys Ser	Asp Gly	Ser	Glu Ser	Asp Met	Ala	Leu Ala	Met
2630			2635			2640		
Asn Arg	Tyr Ile	Gly Asn	Ser	Ile Leu	Pro Leu	Leu	Ile Lys	His
2645			2650			2655		
Ser Lys	Phe Tyr	Asn Glu	Ala	Glu Asn	Tyr Ala	Ser	Leu Leu	Asp
2660			2665			2670		
Ala Thr	Leu His	Thr Val	Tyr	Arg Leu	Ser Lys	Asn	Arg Met	Leu
2675			2680			2685		
Thr Lys	Gly Gln	Arg Glu	Ala	Val Ser	Asp Phe	Leu	Val Ala	Leu
2690			2695			2700		
Thr Ser	Gln Met	Gln Pro	Ala	Met Leu	Leu Lys	Leu	Leu Arg	Lys
2705			2710			2715		
Leu Thr	Val Asp	Val Ser	Lys	Leu Ser	Glu Tyr	Thr	Thr Val	Ala
2720			2725			2730		
Leu Arg	Leu Leu	Thr Leu	His	Phe Asp	Arg Cys	Ala	Lys Tyr	Tyr
2735			2740			2745		

Gly	Ser	Thr	Gln	Gly	Gln	Gly	Ser	Tyr	Gly	Ala	Ser	Ser	Asp	Glu
2750						2755					2760			
Glu	Lys	Arg	Leu	Thr	Met	Leu	Leu	Phe	Ser	Asn	Ile	Phe	Asp	Ser
2765						2770					2775			
Leu	Ser	Asn	Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	Lys	Ala	Leu
2780						2785					2790			
Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr	Ser
2795						2800					2805			
Leu	Ser	Lys	Asn	Thr	Asp	Glu	Asp	Tyr	Tyr	Gly	Arg	Gln	Met	Gly
2810						2815					2820			
Ala	Pro	Asp	Gln	Pro	Gln	Tyr	Met	Pro	Asn	Pro	Ile	Asp	Thr	Asn
2825						2830					2835			
Asn	Val	His	Leu	Asp	Asn	Asp	Leu	Asn	Ser	Leu	Val	Gln	Lys	Phe
2840						2845					2850			
Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Arg	Leu	Glu	Gly
2855						2860					2865			
Gly	Trp	Thr	Tyr	Gly	Asp	Ile	Arg	Ser	Asp	Asn	Asp	Arg	Lys	His
2870						2875					2880			
Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Ser	Glu	Tyr	Glu	Arg	Glu
2885						2890					2895			
Arg	Tyr	Arg	Asp	Pro	Val	Arg	Glu	Cys	Leu	Lys	Gly	Leu	Leu	Ala
2900						2905					2910			
Ile	Gly	Trp	Thr	Val	Glu	His	Ser	Glu	Val	Glu	Val	Pro	Leu	Asn
2915						2920					2925			
His	Arg	Gly	Ser	Thr	Arg	Arg	Gln	Ser	Lys	Pro	Gln	Ile	Asn	Glu
2930						2935					2940			
Phe	Gln	Asn	Glu	Gly	Ser	Pro	Phe	Asn	Tyr	Asn	Pro	His	Pro	Val
2945						2950					2955			
Asp	Met	Ser	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn	Met	Ala
2960						2965					2970			
Glu	Arg	Leu	Ala	Glu	Asn	Ser	His	Asp	Ile	Trp	Ala	Lys	Lys	Lys
2975						2980					2985			
Asn	Glu	Glu	Leu	Asn	Gly	Cys	Gly	Gly	Val	Ile	His	Pro	Gln	Leu
2990						2995					3000			
Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Lys	Lys	Asp	Arg
3005						3010					3015			
Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Met	Gln	Tyr	Gln	Gly	Tyr
3020						3025					3030			
Lys	Leu	His	Lys	Pro	Ser	Lys	Gly	Gly	Ala	Val	Glu	Glu	Gly	Gly
3035						3040					3045			

Ala Thr	Gln Ala Ala Val	Glu	Leu Arg Phe Ser Tyr	Ser Leu Leu
3050		3055		3060
Glu Lys	Leu Ile Gln Tyr	Leu	Asp Arg Ala Thr Ile	Asn Met Lys
3065		3070		3075
Leu Leu	Lys Pro Ser Thr Thr	Phe Ser Arg Arg Ser	Ser Phe Lys	
3080		3085		3090
Thr Ala	Thr Arg Asp Ile	Lys	Phe Phe Ser Lys Val	Val Leu Pro
3095		3100		3105
Leu Met	Glu Lys Tyr Phe	Ser	Thr His Arg Asn Tyr	Phe Ile Ala
3110		3115		3120
Ile Ala	Thr Ala Thr Asn Asn	Ile Gly Ala Ala Ser	Leu Lys Glu	
3125		3130		3135
Lys Glu	Met Val Ala Ser	Ile	Phe Cys Lys Leu Ala	Ala Leu Leu
3140		3145		3150
Arg Asn	Arg Leu Ser Ala	Phe	Gly Pro Asp Val Arg	Ile Thr Val
3155		3160		3165
Arg Cys	Leu Gln Val Leu	Val	Lys Gly Ile Asp Ala	Arg Thr Leu
3170		3175		3180
Thr Lys	Asn Cys Pro Glu	Phe	Ile Arg Thr Ser Met	Leu Thr Phe
3185		3190		3195
Phe Asn	Gln Thr Ser Asp	Asp	Leu Gly Asn Thr Ile	Leu Asn Gln
3200		3205		3210
Gln Asp	Gly Lys Tyr Ser	His	Leu Arg Gly Thr His	Leu Lys Thr
3215		3220		3225
Ser Thr	Ser Leu Gly Tyr	Val	Asn Gln Val Val Leu	Pro Val Leu
3230		3235		3240
Thr Ala	Met Phe Asp His	Leu	Ala Ala Cys Asp Tyr	Gly Ser Asp
3245		3250		3255
Leu Leu	Leu Asp Glu Ile	Gln	Val Ala Ser Tyr Lys	Ile Leu Ala
3260		3265		3270
Ala Leu	Tyr His Leu Gly	Thr	Asp Gly Thr Leu Thr	His Asp Arg
3275		3280		3285
Lys Tyr	Leu Lys Thr Glu	Ile	Glu Arg His Arg Pro	Ala Leu Gly
3290		3295		3300
Ser Cys	Leu Gly Ala Tyr	Ser	Ser Cys Phe Pro Val	Ala Phe Leu
3305		3310		3315
Glu Pro	His Leu Asn Lys	His	Asn Gln Tyr Ser Leu	Leu Asn Arg
3320		3325		3330
Ile Ala	Asp His Ser Leu	Glu	Ala Gln Asp Ile Met	Val Lys Met
3335		3340		3345

Glu Ser Cys Met Pro Asn Leu	Glu Thr Ile Leu Gly	Glu Val Asp
3350	3355	3360
Gln Phe Val Glu Ser Asp Lys	Thr Tyr Asn Asp Ala	Pro His Ile
3365	3370	3375
Ile Asp Val Ile Leu Pro Leu	Leu Cys Ala Tyr Leu	Pro Phe Trp
3380	3385	3390
Trp Ser Gln Gly Pro Asp Asn	Val Ser Pro Thr Ser	Gly Asn His
3395	3400	3405
Val Thr Met Val Thr Ala Asp	His Met Asn Pro Leu	Leu Arg Asn
3410	3415	3420
Val Leu Lys Met Ile Lys Lys	Asn Ile Gly Asn Asp	Asn Ala Pro
3425	3430	3435
Trp Met Thr Arg Ile Ala Ala	Tyr Thr Gln Gln Ile	Ile Ile Asn
3440	3445	3450
Thr Ser Glu Glu Leu Leu Lys	Asp Pro Phe Leu Pro	Leu Ala Glu
3455	3460	3465
Arg Val Lys Lys Arg Thr Glu	Asn Met Leu His Lys	Glu Asp Ser
3470	3475	3480
Met Arg Gly Phe Ile Lys Ser	Ala Thr Asp Asp Thr	Ser Gln Val
3485	3490	3495
Glu Thr Gln Leu Gln Glu Asp	Trp Asn Leu Leu Val	Arg Asp Ile
3500	3505	3510
Tyr Ser Phe Tyr Pro Leu Leu	Ile Lys Tyr Val Asp	Leu Gln Arg
3515	3520	3525
Asn His Trp Leu Lys Asp Asn	Ile Pro Glu Ala Glu	Glu Leu Tyr
3530	3535	3540
Asn His Val Ala Glu Ile Phe	Asn Ile Trp Ser Lys	Ser Gln Tyr
3545	3550	3555
Phe Leu Lys Glu Glu Gln Asn	Phe Ile Ser Ala Asn	Glu Ile Asp
3560	3565	3570
Asn Met Ala Leu Ile Met Pro	Thr Ala Thr Arg Arg	Ser Ala Ile
3575	3580	3585
Ser Glu Gly Ala Pro Ala Val	Gly Gly Lys Val Lys	Lys Lys Lys
3590	3595	3600
Lys Asn Arg Asp Lys Lys Arg	Asp Lys Asp Lys Glu	Val Gln Ala
3605	3610	3615
Ser Leu Met Val Ala Cys Leu	Lys Arg Leu Leu Pro	Val Gly Leu
3620	3625	3630
Asn Leu Phe Ala Gly Arg Glu	Gln Glu Leu Val Gln	His Cys Lys
3635	3640	3645

Asp	Arg	Tyr	Leu	Lys	Lys	Met	Pro	Glu	Tyr	Asp	Val	Ile	Glu	Phe
3650						3655					3660			
Ala	Arg	Asn	Gln	Leu	Thr	Leu	Pro	Asp	Lys	Leu	Asp	Pro	Ser	Asp
3665						3670					3675			
Glu	Met	Ser	Trp	Gln	His	Tyr	Leu	Tyr	Ser	Lys	Leu	Gly	Lys	Thr
3680						3685					3690			
Glu	Glu	Pro	Val	Asp	Glu	Gln	Ala	Leu	Glu	Lys	Ala	Asn	Val	Asn
3695						3700					3705			
Ser	Asn	Glu	Lys	Gly	Lys	Asp	Lys	Thr	Gln	Glu	Thr	Val	Asp	Arg
3710						3715					3720			
Ile	Val	Ala	Met	Ala	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile	Asp
3725						3730					3735			
His	Pro	Gln	Gln	Gln	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val	Ser
3740						3745					3750			
Ile	Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Thr	Ser
3755						3760					3765			
Leu	His	Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe	Ala	Arg
3770						3775					3780			
Ser	Tyr	Tyr	Glu	Gln	Trp	Leu	Gln	Glu	Glu	Asn	Val	Gly	Gln	Glu
3785						3790					3795			
Val	Met	Val	Glu	Asp	Leu	Thr	Gln	Thr	Phe	Glu	Asp	Ser	Glu	Lys
3800						3805					3810			
Ser	Lys	Lys	Glu	Gly	Glu	Glu	Thr	Asp	Ser	Lys	Pro	Asp	Pro	Leu
3815						3820					3825			
Thr	Gln	Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu	Arg
3830						3835					3840			
Ser	Gly	Ala	Leu	Gln	Glu	Asp	Leu	Leu	Tyr	Met	Ser	Tyr	Ala	Gln
3845						3850					3855			
Ile	Ala	Ala	Lys	Ser	Thr	Gly	Lys	Glu	Glu	Glu	Glu	Gly	Gly	Asp
3860						3865					3870			
Glu	Glu	Gly	Gly	Glu	Gly	Gly	Glu	Glu	Gly	Glu	Gly	Thr	Ser	Ile
3875						3880					3885			
His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His	Gln	Ala
3890						3895					3900			
Arg	Leu	Ser	Asn	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	Leu	His	Ile
3905						3910					3915			
Ser	Ala	Ser	Lys	Gly	Ile	Pro	Ser	Glu	Met	Val	Met	Thr	Thr	Leu
3920						3925					3930			
Asn	Leu	Gly	Ile	Ala	Ile	Leu	Arg	Gly	Gly	Asn	Ile	Asp	Ile	Gln
3935						3940					3945			

Met Gly 3950	Met Leu Asn His 3955	Leu Lys Glu Lys Lys 3960	Asp Val Gly Phe
Phe Thr 3965	Ser Ile Ala Gly 3970	Leu Met Asn Ser Cys 3975	Ser Val Leu Asp
Leu Asp 3980	Ala Phe Glu Arg 3985	Asn Thr Lys Ala Glu 3990	Gly Leu Gly Val
Gly Ser 3995	Glu Gly Ala Ala 4000	Gly Glu Lys Asn Met 4005	His Asp Ala Glu
Phe Thr 4010	Cys Ala Leu Phe 4015	Arg Phe Ile Gln Leu 4020	Thr Cys Glu Gly
His Asn 4025	Leu Glu Trp Gln 4030	Asn Tyr Leu Arg Thr 4035	Gln Ala Gly Asn
Thr Thr 4040	Thr Val Asn Val 4045	Val Ile Cys Thr Val 4050	Asp Tyr Leu Leu
Arg Leu 4055	Gln Glu Ser Ile 4060	Met Asp Phe Tyr Trp 4065	His Tyr Ser Ser
Lys Glu 4070	Ile Ile Asp Pro 4075	Ala Gly Lys Ala Asn 4080	Phe Phe Lys Ala
Ile Glu 4085	Val Ala Ser Gln 4090	Val Phe Asn Thr Leu 4095	Ile Glu Val Ile
Gln Gly 4100	Pro Cys Thr Leu 4105	Asn Gln Gln Ala Leu 4110	Ala His Ser Arg
Leu Trp 4115	Asp Ala Val Gly 4120	Gly Phe Leu Phe Leu 4125	Phe Ser His Met
Gln Asp 4130	Lys Leu Ser Lys 4135	His Ser Ser Gln Val 4140	Asp Leu Leu Lys
Glu Leu 4145	Leu Asn Leu Gln 4150	Lys Asp Met Ile Thr 4155	Met Met Leu Ser
Met Leu 4160	Glu Gly Asn Val 4165	Val Asn Gly Thr Ile 4170	Gly Lys Gln Met
Val Asp 4175	Thr Leu Val Glu 4180	Ser Ala Ser Asn Val 4185	Glu Leu Ile Leu
Lys Tyr 4190	Phe Asp Met Phe 4195	Leu Lys Leu Ala Asp 4200	Leu Ile Glu Ser
Pro Ser 4205	Phe His Glu Val 4210	Asp Met Lys Asn Glu 4215	Gly Trp Val Thr
Pro Lys 4220	Asp Phe Arg Glu 4225	Lys Met Glu Gln Ser 4230	Lys Asn Tyr Thr
Pro Glu 4235	Glu Met Asp Phe 4240	Leu Leu Ala Cys Cys 4245	Glu Arg Asn His

Glu Gly	Lys Ile Asp Tyr Arg	Ala Phe Val Glu His	Phe His Glu
4250	4255		4260
Pro Ser	Lys Glu Ile Gly Phe	Asn Leu Ala Val Leu	Leu Thr Asn
4265	4270		4275
Leu Ser	Glu His Met Pro Asn	Glu Pro Arg Leu Ala	Arg Phe Leu
4280	4285		4290
Glu Thr	Ala Gly Ser Val Leu	Asn Tyr Phe Glu Pro	Phe Leu Gly
4295	4300		4305
Arg Ile	Glu Ile Leu Gly Ser	Ser Lys Arg Ile Glu	Arg Val Tyr
4310	4315		4320
Phe Glu	Ile Lys Asp Ser Asn	Ile Glu Gln Trp Glu	Lys Pro Gln
4325	4330		4335
Ile Arg	Glu Ser Lys Arg Ala	Phe Phe Tyr Ser Ile	Val Thr Glu
4340	4345		4350
Gly Gly	Asp Lys Glu Lys Leu	Glu Ala Phe Val Asn	Phe Cys Glu
4355	4360		4365
Asp Ala	Ile Phe Glu Met Thr	His Ala Ser Gly Leu	Met Ala Thr
4370	4375		4380
Asp Asp	Gly Gly Gly Asn Val	Lys Arg Asp Thr Ala	Tyr Ser Ser
4385	4390		4395
Tyr Met	Ser Glu Glu Glu Glu	Glu Arg Ala Ala Arg	Asp Pro Ile
4400	4405		4410
Arg Arg	Thr Ile Thr Ala Val	Lys Glu Gly Leu Lys	Phe Gly Val
4415	4420		4425
His Met	Leu Ser Pro Ala Asn	Ile Lys His Gln Ile	Gly Val Met
4430	4435		4440
Gln Thr	Lys Ser Ile Pro Glu	Leu Ile Val Gly Phe	Phe Lys Ile
4445	4450		4455
Ile Phe	Tyr Ile Phe Tyr Tyr	Thr Gly Tyr Ala His	Phe Cys Val
4460	4465		4470
Val Arg	Tyr Ile Phe Gly Ile	Leu Leu Asn Leu Met	Arg Gly Pro
4475	4480		4485
Ala Pro	Glu Gln Glu Glu Glu	Pro Val Val Glu Glu	Glu Thr Phe
4490	4495		4500
Gly Arg	Ala Leu Pro Pro Leu	Pro Leu Glu Glu Pro	Pro Gly Thr
4505	4510		4515
Val Gln	Ala Phe Gly Leu Asp	Ile Asn Lys Glu Glu	Asn Gly Met
4520	4525		4530
Tyr Lys	Val Val Val His Glu	Ser Pro Ala Asn Ser	Ser Met Glu
4535	4540		4545

Glu Gly	Gly Glu Ser Ser	Pro	Glu Asp Gly Ala	Ala	Ala Ser Gly
4550		4555		4560	
Glu Leu	Val Glu Gly Glu	Pro	His Gln Glu Pro	Ile	Ser Ile Val
4565		4570		4575	
Asp Leu	Leu Gly Gly Glu	Ala	Ala Lys Lys Ala	Ala	Gln Glu Arg
4580		4585		4590	
Gln Glu	Ala Gln Lys Ala	Gln	Glu Ala Ala Met	Ala	Ser Ile Glu
4595		4600		4605	
Ala Glu	Ala Lys Lys Ser	Ser	Ser Ala Pro Gln	Glu	Thr Pro Ala
4610		4615		4620	
Val His	Gln Ile Asp Phe	Ser	Gln Tyr Thr His	Arg	Ala Val Ser
4625		4630		4635	
Phe Leu	Ala Arg Asn Phe	Tyr	Asn Leu Lys Tyr	Val	Ala Leu Val
4640		4645		4650	
Leu Ala	Phe Ser Ile Asn	Phe	Met Leu Leu Phe	Tyr	Lys Val Thr
4655		4660		4665	
Ser Phe	Thr Glu Glu Ala	Asp	Ser Ser Ala Glu	Glu	Glu Leu Ile
4670		4675		4680	
Leu Gly	Ser Gly Ser Gly	Gly	Gly Ala Asp Ile	Thr	Gly Ser Gly
4685		4690		4695	
Phe Gly	Gly Ser Gly Asp	Gly	Gly Ser Gly Asp	Gly	Glu Met Glu
4700		4705		4710	
Asp Glu	Ile Pro Glu Leu	Val	His Val Asp Glu	Asp	Phe Phe Tyr
4715		4720		4725	
Met Glu	His Val Leu Arg	Ile	Ala Ala Cys Leu	His	Ser Leu Val
4730		4735		4740	
Ser Leu	Ala Met Leu Ile	Ala	Tyr Tyr His Leu	Lys	Val Pro Leu
4745		4750		4755	
Ala Ile	Phe Lys Arg Glu	Lys	Glu Ile Ala Arg	Arg	Leu Glu Phe
4760		4765		4770	
Glu Gly	Leu Phe Ile Ala	Glu	Gln Pro Glu Asp	Asp	Asp Phe Lys
4775		4780		4785	
Ser His	Trp Asp Lys Leu	Val	Ile Ser Ala Lys	Ser	Phe Pro Val
4790		4795		4800	
Asn Tyr	Trp Asp Lys Phe	Val	Lys Lys Lys Val	Arg	Gln Lys Tyr
4805		4810		4815	
Ser Glu	Thr Tyr Asp Phe	Asp	Ser Ile Ser Asn	Leu	Leu Gly Met
4820		4825		4830	
Glu Lys	Ser Thr Phe Ala	Ala	Gln Glu Ser Glu	Glu	Thr Gly Ile
4835		4840		4845	



Phe	Lys	Tyr	Ile	Met	Asn	Ile	Asp	Trp	Arg	Tyr	Gln	Val	Trp	Lys
4850						4855					4860			
Ala	Gly	Val	Thr	Phe	Thr	Asp	Asn	Ala	Phe	Leu	Tyr	Ser	Leu	Trp
4865						4870					4875			
Tyr	Phe	Ser	Phe	Ser	Val	Met	Gly	Asn	Phe	Asn	Asn	Phe	Phe	Phe
4880						4885					4890			
Ala	Ala	His	Leu	Leu	Asp	Val	Ala	Val	Gly	Phe	Lys	Thr	Leu	Arg
4895						4900					4905			
Thr	Ile	Leu	Gln	Ser	Val	Thr	His	Asn	Gly	Lys	Gln	Leu	Val	Leu
4910						4915					4920			
Thr	Val	Met	Leu	Leu	Thr	Ile	Ile	Val	Tyr	Ile	Tyr	Thr	Val	Ile
4925						4930					4935			
Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe	Tyr	Ile	Gln	Glu	Glu	Asp	Glu
4940						4945					4950			
Glu	Val	Asp	Lys	Lys	Cys	His	Asp	Met	Leu	Thr	Cys	Phe	Val	Phe
4955						4960					4965			
His	Leu	Tyr	Lys	Gly	Val	Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp	Glu
4970						4975					4980			
Ile	Gly	Asp	Pro	Asp	Gly	Asp	Asp	Tyr	Glu	Val	Tyr	Arg	Ile	Ile
4985						4990					4995			
Phe	Asp	Ile	Thr	Phe	Phe	Phe	Phe	Val	Ile	Ile	Ile	Leu	Leu	Ala
5000						5005					5010			
Ile	Ile	Gln	Gly	Leu	Ile	Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg	Asp
5015						5020					5025			
Gln	Leu	Glu	Ser	Val	Lys	Asp	Asn	Met	Glu	Ser	Asn	Cys	Phe	Ile
5030						5035					5040			
Cys	Gly	Met	Gly	Lys	Asp	Phe	Phe	Asp	Ile	Val	Pro	His	Gly	Phe
5045						5050					5055			
Asp	Thr	His	Val	Gln	Lys	Glu	His	Asn	Leu	Ala	Asn	Tyr	Met	Phe
5060						5065					5070			
Phe	Leu	Met	His	Leu	Ile	Asn	Lys	Pro	Asp	Thr	Glu	Tyr	Thr	Gly
5075						5080					5085			
Gln	Glu	Thr	Tyr	Val	Trp	Asn	Met	Tyr	Gln	Gln	Arg	Ser	Trp	Asp
5090						5095					5100			
Phe	Phe	Pro	Val	Gly	Asp	Cys	Phe	Arg	Lys	Gln	Tyr	Glu	Asp	Glu
5105						5110					5115			
Leu	Ser	Gly	Gly	Gly	Gly	Gly	Gly							
5120						5125								

&lt;210&gt; 57

&lt;211&gt; 4868

&lt;212&gt; PRT

&lt;213&gt; Anopheles gambiae

&lt;400&gt; 57

Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu Arg Val Cys Leu  
 1 5 10 15

Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu Asn Ile Ala  
 20 25 30

Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val Phe Val Ile Glu  
 35 40 45

Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr Ala Ala Gly  
 50 55 60

Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr Leu Leu Tyr  
 65 70 75 80

Gly Asn Ala Ile Leu Leu Arg His Asn Asn Ser Asp Met Tyr Leu Ala  
 85 90 95

Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe Asp Val Gly  
 100 105 110

Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr Val His Pro  
 115 120 125

Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val Gly Asp Asp  
 130 135 140

Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His Thr Thr Lys  
 145 150 155 160

Glu Asn Asp Leu Ser Ile Val Asn Ala Ser Phe His Val Thr His Trp  
 165 170 175

Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys Tyr Val Gly  
 180 185 190

Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly Gly Asp Glu  
 195 200 205

Cys Leu Thr Ile Pro Ser Thr Trp Ser Leu Asp Ser Gly Gln Asn Ile  
 210 215 220

Val Val Tyr Glu Gly Gly Ser Val Met Ser Gln Ala Arg Ser Leu Trp  
 225 230 235 240

Arg Leu Glu Leu Ala Arg Thr Lys Trp Ala Gly Gly Phe Ile Asn Trp  
 245 250 255

Ser His Pro Met Arg Ile Arg His Leu Thr Thr Gly Arg Tyr Leu Gly  
 260 265 270

Val Asn Glu Asn Asn Glu Leu Ile Leu Met Ser Arg Asp Gln Ala Thr  
 275 280 285

Thr Ser Gln Thr Ala Phe Val Leu Arg Leu Glu Lys Asp Asp Gln Lys

290	295	300
Val Val Leu Glu Asp Lys Asp Leu Glu Ile Ile Gly Ala Pro Ile Ile 305 310 315 320		
Lys Tyr Gly Asp Ser Thr Val Ile Met Gln His Tyr Glu Ser Gly Leu 325 330 335		
Trp Val Ser Tyr Lys Ser Tyr Glu Thr Lys Lys Lys Gly Val Gly Lys 340 345 350		
Val Glu Glu Lys Gln Ala Ile Leu His Glu Glu Gly Lys Met Asp Asp 355 360 365		
Gly Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser Arg Thr Ala Arg 370 375 380		
Val Ile Arg Lys Cys Ser Ser Leu Phe Thr Lys Phe Ile Ser Gly Leu 385 390 395 400		
Glu Thr Leu Gln Glu Asn Arg Arg His Ser Ile Phe Leu Gln Thr Val 405 410 415		
Asn Leu Gly Glu Met Val Met Cys Leu Glu Asp Leu Ile Asn Tyr Phe 420 425 430		
Ala Gln Pro Glu Asp Asp Met Glu His Glu Glu Lys Gln Asn Arg Leu 435 440 445		
Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu Glu Gly Val Leu 450 455 460		
Asn Leu Ile Leu Glu Ala Ile Asp Lys Ile Asn Val Ile Ser Ser Gln 465 470 475 480		
Gly Phe Leu Ala Ser Phe Leu Ala Ser Asp Glu Ser Gly Gln Ser Trp 485 490 495		
Asp Met Ile Ser Gly Tyr Leu Tyr Gln Leu Leu Ala Ala Ile Ile Lys 500 505 510		
Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser Asn Arg Leu Asn 515 520 525		
Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Ser Glu Gly Ser Gly 530 535 540		
Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro Glu Ala Leu 545 550 555 560		
Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile Ser Leu Leu Glu 565 570 575		
Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys Ser Leu Cys 580 585 590		
Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn Ile Cys Asp 595 600 605		
Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Gly Leu Val Asp		

610					615					620					
His	Val	Ala	Ser	Ile	Arg	Pro	Asn	Ile	Phe	Val	Gly	Arg	Val	Glu	Gly
625					630					635					640
Ser	Ala	Ile	Tyr	Gln	Lys	Trp	Tyr	Phe	Glu	Val	Thr	Met	Asp	His	Ile
				645					650					655	
Glu	Gln	Met	Thr	His	Met	Thr	Pro	His	Leu	Arg	Ile	Gly	Trp	Ala	Asn
			660					665					670		
Thr	Ala	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Glu	Lys	Trp	Gly	Gly
		675					680						685		
Asn	Gly	Val	Gly	Asp	Asp	Leu	Phe	Ser	Tyr	Gly	Phe	Asp	Gly	Val	Tyr
	690					695					700				
Phe	Trp	Ser	Ala	Gly	Arg	Arg	Thr	Cys	Val	Val	Pro	Arg	Glu	Val	Thr
705					710					715					720
Glu	Pro	Phe	Ile	Lys	Lys	Gly	Asp	Val	Ile	Gly	Cys	Thr	Leu	Asp	Leu
			725						730					735	
Ser	Val	Pro	Val	Ile	Arg	Phe	Thr	Phe	Asn	Gly	Glu	Pro	Val	Gln	Gly
			740					745					750		
Cys	Phe	Thr	Asp	Phe	Asn	Leu	Asp	Gly	Met	Phe	Phe	Pro	Val	Met	Ser
		755					760					765			
Cys	Ser	Ser	Lys	Leu	Ser	Cys	Arg	Phe	Leu	Phe	Gly	Gly	Asp	Asn	Gly
	770					775					780				
Arg	Leu	Lys	Phe	Asn	Pro	Pro	Pro	Gly	Phe	Ser	Pro	Leu	Val	Gln	Cys
785					790					795					800
Leu	Met	Pro	His	Gln	Asn	Leu	Ser	Leu	Asp	Pro	Cys	Phe	Tyr	Phe	Gly
			805						810					815	
Asn	Leu	Asn	Lys	Asn	Val	Leu	Ala	Gly	Pro	Trp	Leu	Val	Glu	Asp	Asp
			820					825					830		
Ser	Ala	Phe	Val	Pro	Lys	Pro	Val	Asp	Thr	Ser	Ile	Val	Thr	Leu	Pro
		835						840				845			
Ser	Ser	Val	Glu	Thr	Ile	Lys	Asp	Lys	Leu	Ala	Glu	Asn	Ile	His	Glu
	850					855					860				
Met	Trp	Ala	Leu	Asn	Lys	Ile	Glu	Ala	Gly	Trp	Thr	Trp	Gly	Glu	Arg
865					870					875					880
Arg	Asp	Asp	Val	Tyr	Arg	Ile	His	Pro	Cys	Leu	Thr	Ser	Phe	Glu	Lys
			885					890						895	
Leu	Pro	Ala	Ala	Glu	Lys	Arg	Tyr	Asp	Cys	Gln	Leu	Ala	Val	Gln	Thr
			900					905					910		
Leu	Lys	Thr	Ile	Leu	Ala	Leu	Gly	Tyr	Tyr	Ile	Ser	Met	Asp	Lys	Pro
		915					920					925			
Pro	Ala	Arg	Ile	Arg	Pro	Ile	Arg	Leu	Pro	Asn	Asp	Pro	Tyr	Met	Gln

930					935					940					
Gly 945	Asn	Gly	Tyr	Lys	Pro 950	Ala	Pro	Leu	Asp	Leu 955	Ser	Ala	Ala	Val	Leu 960
Thr	Pro	Lys	Met 965	Glu	Glu	Leu	Val	Asp	Gln 970	Leu	Ala	Glu	Asn	Thr 975	His
Asn	Leu	Trp	Ala 980	Lys	Glu	Arg	Ile	Gln 985	Gln	Gly	Trp	Thr	Tyr 990	Gly	Leu
Asn	Glu	Asp 995	Ser	Glu	Asn	Leu	Arg 1000	Ser	Pro	His	Leu	Val 1005	Pro	Tyr	Ser
Lys	Val 1010	Asp	Glu	Ala	Ile	Lys 1015	Lys	Ala	Asn	Arg	Asp 1020	Thr	Ala	Ser	
Glu	Thr 1025	Val	Arg	Thr	Leu	Leu 1030	Ile	Tyr	Gly	Tyr	Asn 1035	Leu	Asp	Pro	
Pro	Thr 1040	Gly	Glu	Ala	Asn	Glu 1045	Ala	Leu	Ala	Ala	Glu 1050	Ala	Leu	Arg	
Gln	Lys 1055	Phe	Ala	Ala	Tyr	Arg 1060	Thr	Tyr	Arg	Val	Glu 1065	Arg	Thr	Tyr	
Ala	Val 1070	Thr	Ser	Gly	Lys	Trp 1075	Tyr	Phe	Glu	Phe	Glu 1080	Val	Leu	Thr	
Ala	Gly 1085	Pro	Met	Arg	Val	Gly 1090	Trp	Ala	Arg	Ala	Asp 1095	Cys	Asn	Pro	
Gly	Thr 1100	Met	Leu	Gly	Ser	Asp 1105	Asp	Ala	Ser	Trp	Ala 1110	Phe	Asp	Gly	
Tyr	Asn 1115	Ile	Gly	Gln	Lys	Ala 1120	Arg	Val	Val	Tyr	Gly 1125	Gln	Asp	Val	
Asp	Ser 1130	Leu	Lys	Trp	Phe	Thr 1135	Thr	Cys	Gly	Leu	Gln 1140	Glu	Gly	Tyr	
Glu	Pro 1145	Phe	Cys	Val	Asn	Met 1150	Lys	Arg	Pro	Val	Thr 1155	His	Trp	Tyr	
Thr	Lys 1160	Asp	Gln	Pro	Ile	Phe 1165	Glu	Asn	Thr	Asp	Glu 1170	Ile	Pro	Glu	
Cys	Lys 1175	Ile	Asp	Val	Thr	Arg 1180	Ile	Pro	Gly	Gly	Ala 1185	Asp	Thr	Pro	
Pro	Cys 1190	Met	Lys	Ile	Ser	His 1195	Asn	Thr	Phe	Glu	Thr 1200	Met	Glu	Lys	
Ala	Asn 1205	Trp	Glu	Phe	Leu	Arg 1210	Leu	Ser	Leu	Pro	Val 1215	Thr	Cys	Ala	
Asn	Thr 1220	Phe	Ile	Thr	Glu	Gln 1225	Glu	Lys	Met	Arg	Arg 1230	Trp	Glu	Glu	
Ile	Arg	Ile	Arg	Gln	His	Arg	Leu	Met	Thr	Glu	Val	Asp	His	Ser	

1235	1240	1245
Ala Pro 1250	Ala His Phe Asp His 1255	Ile Met Arg Ser Gly Phe Thr Met 1260
Asn Asp 1265	Ile Lys Gly Leu His 1270	Arg Asn Tyr Ser Glu Asp Ala Ala 1275
Glu Ala 1280	Asp Glu Met Met Arg 1285	Asn Gly Pro Arg Arg Pro Ser Arg 1290
His Gln 1295	Gly Arg Gly Gly Leu 1300	Ser Pro Pro Gly Ile Glu Ile Asn 1305
Gly Glu 1310	Ala Thr Ser Asp Gly 1315	Glu Leu Asn Ala Tyr Ser Asp Asn 1320
Glu Leu 1325	Glu Gly Gly Asp Asp 1330	Arg Lys Lys Arg Gly Arg Ser Pro 1335
Phe Arg 1340	Leu Phe Gly Lys Lys 1345	Arg Asp Gln Ser Lys Asp Lys Leu 1350
Lys Asp 1355	Arg Arg Thr Pro Glu 1360	Pro Glu Pro Arg Lys Ser Asn Leu 1365
Lys Val 1370	Thr Gln Arg Gly Gln 1375	Ala Thr Arg Met Ser Asn Ser Asp 1380
Leu Arg 1385	Ala Gln Ala Pro Leu 1390	Thr Pro Glu Arg Lys Gly Met Gly 1395
Ser Pro 1400	Gln Val Glu Ser Phe 1405	Gly Asn Glu Val Tyr Asp Ala Asp 1410
Cys Leu 1415	Arg Leu Ile Asn Glu 1420	Tyr Phe Tyr Gly Val Arg Ile Phe 1425
Pro Gly 1430	Gln Asp Pro Thr His 1435	Val Tyr Val Gly Trp Val Thr Thr 1440
Gln Tyr 1445	His Val His Ser Lys 1450	Glu Phe Ser Gln Asn Lys Val Arg 1455
His Ala 1460	Ala Ile Tyr Val Glu 1465	Asp Glu Asn Glu Lys Thr Ile Glu 1470
Ile Val 1475	Asn Arg Gln Ser Cys 1480	Tyr Met Val Arg Ala Asp Glu Leu 1485
Phe Asn 1490	Glu Val Thr Gln Asp 1495	Ser Ser Gly Lys Gly Ala Ser Gln 1500
Gly Met 1505	Phe Val Gly Cys Phe 1510	Val Asp Thr Ala Thr Gly Thr Ile 1515
Arg Phe 1520	Thr Cys Glu Gly Lys 1525	Glu Thr Ser His Val Phe Leu Met 1530
Glu Pro	Asp Thr Lys Leu Phe	Pro Ala Ile Phe Val Glu Ala Thr

1535	1540	1545
Ser Lys Glu Ile Leu Gln Ile	Glu Leu Gly Arg Thr	Pro Thr Thr
1550	1555	1560
Leu Pro Leu Ser Ala Ala Val	Leu Pro Thr Ser Asp	Lys His Ile
1565	1570	1575
Asn Pro Gln Phe Pro Pro Arg	Leu Lys Val Gln Cys	Leu Lys Pro
1580	1585	1590
His Gln Trp Ala Arg Val Pro	Asn Thr Ala Leu Gln	Val His Ala
1595	1600	1605
Leu Lys Leu Ser Asp Ile Arg	Gly Trp Ser Met Leu	Cys Glu Asp
1610	1615	1620
Pro Val Ser Met Leu Ala Leu	His Ile Pro Glu Glu	Asp Arg Cys
1625	1630	1635
Ile Asp Ile Leu Glu Leu Ile	Glu Ile Asp Arg Leu	Leu Gln Phe
1640	1645	1650
His Ala His Thr Leu Thr Leu	Tyr Ser Ala Leu Cys	Tyr Gln Ser
1655	1660	1665
Asn Tyr Arg Ala Ala His Ala	Leu Cys Ser His Val	Asp Gln Lys
1670	1675	1680
Gln Leu Leu Tyr Ala Ile Gln	Ser Glu Tyr Met Ser	Gly Pro Leu
1685	1690	1695
Arg Leu Gly Phe Tyr Asp Leu	Leu Ile Ser Leu His	Leu Glu Ser
1700	1705	1710
His Ala Thr Thr Met Glu Val	Cys Lys Asn Glu Tyr	Ile Ile Pro
1715	1720	1725
Leu Gly Ser Glu Leu Arg Glu	Leu Tyr Ile Asp Pro	Glu Met Cys
1730	1735	1740
His Ser Leu Arg Ser Leu Gln	Thr Leu Ser Val Arg	Pro Glu Met
1745	1750	1755
Asn Met Thr Glu Ile Ala Pro	Thr Pro Ser Gln Ser	Asn Met Pro
1760	1765	1770
Thr Ile Val Ala Pro Asp Ser	Ser Ser Glu Pro Ile	Pro Ala Ile
1775	1780	1785
Asp Ser Leu Tyr Ser Pro Arg	Phe Pro Leu Glu Val	Val Arg Glu
1790	1795	1800
Phe Val Met Ser Ala Leu Gln	Glu Ala Val Gln Ile	Asn Gln Val
1805	1810	1815
His Asn Arg Asp Pro Ile Gly	Gly Ser Asn Glu Asn	Leu Phe Leu
1820	1825	1830
Pro Leu Ile Lys Leu Ile Asp	Arg Leu Leu Leu Val	Gly Val Ile

1835	1840	1845
Thr Asn Glu Asp Val Glu Lys 1850	Leu Leu Ile Met 1855	Ile Asp Pro Glu 1860
Thr Trp Asp Pro Ser Phe Glu 1865	Lys Glu Gly Arg 1870	Asp Glu His Arg 1875
Lys Gly Leu Leu Thr Met Lys 1880	Met Ala Glu Gly 1885	Ala Lys Leu Gln 1890
Met Cys Tyr Leu Leu His His 1895	Leu Tyr Asp Val 1900	Gln Leu Arg His 1905
Arg Val Glu Ser Ile Ile Ala 1910	Phe Ala His Asn 1915	Tyr Val Gly Asp 1920
Leu Gln Gln Asp Gln Leu Arg 1925	Arg Tyr Ile Glu 1930	Ile Lys Gln Ser 1935
Asp Leu Pro Ser Ala Val Ala 1940	Ala Lys Lys Thr 1945	Arg Glu Phe Arg 1950
Cys Pro Pro Arg Glu Gln Met 1955	Asn Ala Ile Leu 1960	Gly Tyr Lys Asn 1965
Leu Glu Glu Asp Asp Leu Glu 1970	Asn Ala Ser Cys 1975	Gly Pro Glu Leu 1980
Arg Asn Arg Leu Ile Glu Phe 1985	His Glu Lys Leu 1990	Met Gly Lys Val 1995
Ser Leu Asn Ala Leu Gln Glu 2000	Pro Glu Glu Pro 2005	Glu Ala Asp Lys 2010
Leu Glu Glu Gly Arg Pro Gly 2015	Ala Met Lys Lys 2020	Leu Tyr Asn Phe 2025
Ile Asn Ala Val Lys Glu Leu 2030	Glu Glu Asp Pro 2035	Lys Glu Pro Val 2040
Glu Glu Glu Lys Lys Thr Pro 2045	Glu Glu Val Phe 2050	Arg Lys Val Leu 2055
Ile Lys Gln Leu Val Ser Trp 2060	Ala Glu Glu Ser 2065	Gln Ile Glu Asn 2070
Pro Lys Leu Val Arg Glu Met 2075	Phe Gly Leu Leu 2080	Val Arg Gln Tyr 2085
Asp Thr Ile Gly Glu Leu Ile 2090	Lys Ala Leu Asn 2095	Lys Thr Tyr Val 2100
Ile Asn Ser Lys Thr Lys Gly 2105	Asp Val Ala Asn 2110	Met Trp Ile Gly 2115
Leu Ser Gln Ile Arg Ala Leu 2120	Leu Pro Val Gln 2125	Met Ser Gln Glu 2130
Glu Glu Glu Leu Met Arg Lys	Arg Leu Trp Lys Leu	Val Asn Asn



2135	2140	2145
His Thr Phe Phe Gln His Pro Asp Leu Ile Arg Ile Leu Arg Val 2150 2155 2160		
His Glu Asn Val Met Ala Val Met Met Asn Thr Leu Gly Arg Arg 2165 2170 2175		
Ala Gln Ala Gln Ser Asp Ala Pro Val Gln Thr Ala Asp Gly Glu 2180 2185 2190		
Glu Ser Ala Pro Lys Glu Lys Asp Thr Ser His Gln Met Val Val 2195 2200 2205		
Ala Cys Cys Arg Phe Leu Cys Tyr Phe Cys Arg Thr Gly Arg Met 2210 2215 2220		
Asn Gln Lys Ala Met Phe Asp His Phe Asp Phe Leu Leu Glu Asn 2225 2230 2235		
Ser Asn Ile Leu Leu Ser Arg Pro Ser Leu Arg Gly Ser Thr Pro 2240 2245 2250		
Leu Asp Val Ala Tyr Ser Ser Leu Met Glu Asn Thr Glu Leu Ala 2255 2260 2265		
Leu Ala Leu Arg Glu His Tyr Leu Glu Lys Ile Ala Ile Tyr Leu 2270 2275 2280		
Ser Arg Cys Gly Leu Gln Ser Asn Ser Glu Leu Ile Glu Arg Gly 2285 2290 2295		
Tyr Pro Asp Leu Gly Trp Asp Pro Val Glu Gly Glu Arg Tyr Leu 2300 2305 2310		
Asp Phe Leu Arg Phe Cys Val Trp Val Asn Gly Glu Ser Val Glu 2315 2320 2325		
Glu Asn Ala Asn Leu Val Ile Arg Leu Leu Ile Arg Arg Pro Glu 2330 2335 2340		
Cys Leu Gly Pro Ala Leu Arg Gly Glu Gly Glu Gly Leu Leu Lys 2345 2350 2355		
Ala Ile Val Asp Ala Asn Lys Met Ser Glu Arg Ile Ser Glu Arg 2360 2365 2370		
Arg Lys Met Gln Asp Glu Ala Glu Gly Thr Ile Thr Gly Leu Asn 2375 2380 2385		
Phe Ser His Pro Leu Pro Glu Gly Asp Asp Asp Glu Asp Tyr Ile 2390 2395 2400		
Asp Thr Gly Ala Ala Ile Leu Cys Phe Tyr Cys Thr Leu Val Asp 2405 2410 2415		
Leu Leu Gly Arg Cys Ala Pro Asp Ala Ala Val Ile Glu Gln Gly 2420 2425 2430		
Lys Asn Glu Ser Leu Arg Ala Arg Ala Ile Leu Arg Ser Leu Val		

2435	2440	2445
Pro Leu Glu Asp Leu Gln Gly	Val Leu Ser Leu Lys	Phe Thr Leu
2450	2455	2460
Thr Asn Pro Ala Leu Gly Glu	Asp Arg Pro Lys Ser	Asp Met Pro
2465	2470	2475
Ser Gly Leu Val Pro Gly His	Lys Gln Ser Ile Val	Leu Phe Leu
2480	2485	2490
Glu Arg Val Tyr Gly Ile Glu	Thr Gln Glu Leu Phe	Tyr Arg Leu
2495	2500	2505
Leu Glu Asp Ala Phe Leu Pro	Asp Leu Arg Ala Ala	Thr Met Leu
2510	2515	2520
Asp Arg Ser Asp Gly Ser Glu	Ser Asp Met Ala Leu	Ser Met Asn
2525	2530	2535
Arg Tyr Ile Gly Asn Ser Ile	Leu Pro Leu Leu Ile	Lys His Ser
2540	2545	2550
Lys Phe Tyr Asn Glu Ala Glu	Asn Tyr Ala Ser Leu	Leu Asp Ala
2555	2560	2565
Thr Leu His Thr Val Tyr Arg	Met Ser Lys Asn Arg	Met Leu Thr
2570	2575	2580
Lys Gly Gln Arg Glu Ala Val	Ser Asp Phe Leu Val	Ala Leu Thr
2585	2590	2595
Ser Ala Met His Pro Ala Met	Leu Leu Lys Leu Leu	Arg Lys Leu
2600	2605	2610
Thr Ile Asp Val Ser Lys Leu	Ser Glu Tyr Thr Thr	Val Ala Leu
2615	2620	2625
Arg Leu Leu Thr Leu His Tyr	Glu Arg Cys Ala Lys	Tyr Tyr Gly
2630	2635	2640
Thr Thr Gly Gly Gly Gln Ala	Ser Gln Phe Gly Ala	Ser Ser Asp
2645	2650	2655
Glu Glu Lys Arg Leu Thr Met	Leu Leu Phe Ser Asn	Ile Phe Asp
2660	2665	2670
Ser Leu Ser Asn Met Asp Tyr	Asp Pro Glu Leu Phe	Gly Lys Ala
2675	2680	2685
Leu Pro Cys Leu Ile Ala Ile	Gly Cys Ala Leu Pro	Pro Asp Tyr
2690	2695	2700
Ser Leu Ser Lys Asn Ser Asp	Asp Asp Leu Tyr Gly	Lys Pro Thr
2705	2710	2715
Gly Gly Gly Pro Asp Gln Pro	His Tyr Asn Pro Gln	Pro Ile Asp
2720	2725	2730
Thr Thr Ala Val Gln Leu Thr	Asn Asp Leu Asn Gln	Ile Val Gln

2735						2740						2745					
Lys	Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Lys	Leu			
2750						2755						2760					
Glu	Asn	Gly	Trp	Thr	Tyr	Gly	Asp	Gln	Trp	Ser	Asp	Ala	Asn	Lys			
2765						2770						2775					
Thr	His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Thr	Leu	Ser	Glu	Tyr	Glu			
2780						2785						2790					
Arg	Glu	Arg	Tyr	Arg	Glu	Pro	Val	Arg	Glu	Ser	Leu	Lys	Ala	Leu			
2795						2800						2805					
Leu	Ala	Leu	His	Trp	Arg	Ile	Glu	His	Ser	Glu	Gly	Asp	Val	Pro			
2810						2815						2820					
Leu	Ser	Asn	Arg	Gly	Ser	Met	Arg	Arg	Gln	Ser	Lys	Pro	Asn	Leu			
2825						2830						2835					
Glu	Leu	Gln	Gly	Asp	Thr	Gly	Ser	Pro	Phe	Asn	Tyr	Asn	Pro	His			
2840						2845						2850					
Pro	Val	Asp	Met	Thr	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn			
2855						2860						2865					
Met	Ala	Glu	Arg	Leu	Ala	Glu	Asn	Ser	His	Asp	Ile	Trp	Ala	Lys			
2870						2875						2880					
Lys	Lys	Asn	Glu	Glu	Leu	Asp	Gln	Cys	Gly	Gly	Ala	Ile	His	Ala			
2885						2890						2895					
Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Arg	Lys			
2900						2905						2910					
Asp	Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Leu	Gln	Tyr	Gln			
2915						2920						2925					
Gly	Leu	Lys	Leu	His	Lys	Pro	Ser	Arg	Gly	Gln	Thr	Glu	Glu	Pro			
2930						2935						2940					
Gly	Met	Ser	Thr	Ala	Ala	Ile	Glu	Leu	Arg	Phe	Ala	Tyr	Ser	Leu			
2945						2950						2955					
Leu	Glu	Lys	Leu	Ile	Ser	Tyr	Ser	Asp	Arg	Ala	Thr	Ile	Asn	Met			
2960						2965						2970					
Lys	Leu	Leu	Lys	Pro	Ser	Ser	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe			
2975						2980						2985					
Lys	Thr	Cys	Ser	Arg	Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu			
2990						2995						3000					
Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser	Ser	Asn	Arg	Asn	Tyr	Phe	Ile			
3005						3010						3015					
Ala	Ile	Ala	Thr	Ala	Thr	Asn	Asn	Val	Gly	Ala	Ala	Ser	Leu	Lys			
3020						3025						3030					
Glu	Lys	Glu	Met	Val	Ala	Gly	Leu	Phe	Cys	Lys	Leu	Ala	Ser	Leu			

3035	3040	3045
Leu Arg His Arg Leu Ala Ala 3050	Phe Gly Ala Asp Val 3055	Arg Ile Thr 3060
Val Arg Cys Leu Gln Val Leu 3065	Val Lys Ser Ile Asp 3070	Ala Lys Ser 3075
Leu Val Lys Asn Cys Pro Glu 3080	Phe Ile Arg Thr Ser 3085	Met Leu Thr 3090
Phe Phe Asn Asn Thr Ala Asp 3095	Asp Leu Gly Gln Thr 3100	Ile Val Asn 3105
Leu Thr Asp Gly Lys Tyr Asp 3110	Arg Leu Arg Gly Thr 3115	His Leu Lys 3120
Thr Ser Thr Ser Leu Ala Tyr 3125	Val Asn Gln Val Ile 3130	Leu Pro Val 3135
Leu Thr Ser Leu Phe Asp His 3140	Leu Ala Ala Cys Asp 3145	Tyr Gly Ser 3150
Asp Leu Leu Leu Asp Glu Ile 3155	Gln Val Ala Ser Tyr 3160	Lys Ile Leu 3165
Ser Ala Leu Tyr Thr Leu Gly 3170	Thr Asp Thr Ser Leu 3175	Thr Arg Asp 3180
Arg Lys Tyr Leu Lys Thr Glu 3185	Leu Glu Arg His Lys 3190	Pro Ala Leu 3195
Gly Ser Cys Leu Gly Ala Phe 3200	Ser Ser Cys Phe Pro 3205	Val Ala Phe 3210
Leu Glu Pro His Ala Asn Lys 3215	His Asn Pro Phe Ser 3220	Leu Leu Asn 3225
Arg Ile Ala Asp Thr Ser Leu 3230	Glu Ala Gln Asp Ile 3235	Met Ser Lys 3240
Met Glu Ser Cys Met Pro Thr 3245	Leu Glu Ser Ile Leu 3250	Ser Glu Val 3255
Asp Gln Phe Val Glu Ser Glu 3260	Lys Thr Tyr Gln Glu 3265	Ala Gln His 3270
Ile Ile Asp Val Ile Leu Pro 3275	Leu Leu Cys Ser Tyr 3280	Leu Pro Phe 3285
Trp Trp Asn Gln Gly Pro Asp 3290	Asn Val Ser Pro Gln 3295	Ser Gly Asn 3300
His Val Thr Met Val Thr Ala 3305	Asp His Met Asn His 3310	Leu Leu Lys 3315
Asn Val Leu Lys Met Ile Arg 3320	Lys Asn Ile Ala Asn 3325	Glu Asn Ala 3330
Pro Trp Met Thr Arg Ile Ala 3335	Thr Tyr Thr Gln Gln 3340	Ile Ile Ile 3345

3335	3340	3345
Asn Ser Ser Glu Glu Leu Leu Lys Asp Val Phe Leu Pro Leu Ala		
3350	3355	3360
Glu Arg Val Lys Lys Arg Cys Asp Ser Met Phe His Lys Glu Glu		
3365	3370	3375
Ser Leu Arg Gly Phe Leu Lys Ser Ser Thr Asp Asp Thr Ser Gln		
3380	3385	3390
Ile Glu Ala Gln Ile Gln Glu Asp Trp Gln Leu Leu Val Arg Asp		
3395	3400	3405
Ile Tyr Ser Phe Tyr Pro Leu Leu Ile Lys Tyr Val Asp Leu Gln		
3410	3415	3420
Arg Asn His Trp Leu Lys Asp Asn Val Ala Glu Ala Glu Glu Leu		
3425	3430	3435
Tyr Asn Tyr Val Ala Glu Ile Phe Asn Val Trp Ser Lys Ser Gln		
3440	3445	3450
Tyr Phe Leu Lys Glu Glu Gln Asn Phe Ile Ser Ala Asn Glu Ile		
3455	3460	3465
Asp Asn Met Thr Leu Ile Met Pro Thr Ala Thr Arg Arg Ser Ala		
3470	3475	3480
Ala Val Ser Gly Asp Met Pro Ala Ser Gly Gly Lys Val Lys Lys		
3485	3490	3495
Lys Lys Arg Ser Arg Asp Lys Lys Arg Asp Lys Asp Lys Glu Ile		
3500	3505	3510
Gln Ser Ser Leu Met Val Ala Cys Leu Lys Arg Leu Leu Pro Val		
3515	3520	3525
Gly Leu Asn Leu Phe Ala Gly Lys Glu Gln Glu Leu Val Gln His		
3530	3535	3540
Cys Lys Asp Arg Tyr Leu Lys Lys Met Pro Glu Tyr Glu Val Ile		
3545	3550	3555
Glu Phe Ala Arg Thr Gln Leu Thr Leu Pro Asp Lys Leu Asp Pro		
3560	3565	3570
Ala Asp Glu Met Ser Trp Gln His Tyr Leu Tyr Ser Lys Leu Gly		
3575	3580	3585
Lys Lys Glu Gln Ile Val Gln Asp Thr Leu Glu Lys Ser Asp Lys		
3590	3595	3600
Lys Pro Glu Asn Lys Ile Glu Asp Thr Val Glu Arg Ile Val Ala		
3605	3610	3615
Met Ala Lys Val Leu Tyr Gly Leu His Met Glu Gln Glu Met Glu		
3620	3625	3630
Lys Gln Lys Leu Leu Phe His Gln Ala Arg Leu Ala Asn Arg Gly		

3635	3640	3645
Val Ala Glu Met Val Leu Leu	His Ile Ser Ala Ser	Lys Gly Val
3650	3655	3660
Pro Ser Glu Met Val Met Arg	Thr Leu Glu Leu Gly	Ile Ala Val
3665	3670	3675
Leu Arg Gly Gly Asn Ile Asp	Ile Gln Met Gly Met	Leu Asn His
3680	3685	3690
Leu Lys Glu Lys Lys Asp Val	Gly Phe Phe Thr Ser	Ile Ala Gly
3695	3700	3705
Leu Met Asn Ser Cys Ser Val	Leu Asp Leu Asp Ala	Phe Glu Arg
3710	3715	3720
Asn Thr Lys Ala Glu Gly Leu	Gly Val Gly Ser Asp	Gly Ala Ala
3725	3730	3735
Gly Glu Lys Asn Met His Asp	Ala Glu Phe Thr Cys	Ala Leu Phe
3740	3745	3750
Arg Phe Ile Gln Leu Thr Cys	Glu Gly His Asn Leu	Asp Trp Gln
3755	3760	3765
Asn Tyr Leu Arg Thr Gln Ala	Gly Asn Thr Thr Thr	Val Asn Val
3770	3775	3780
Val Ile Cys Thr Val Asp Tyr	Leu Leu Arg Leu Gln	Glu Ser Ile
3785	3790	3795
Met Asp Phe Tyr Trp His Tyr	Ser Ser Lys Glu Leu	Ile Asp Pro
3800	3805	3810
Ala Gly Lys Ala Asn Phe Phe	Lys Ala Ile Gly Val	Ala Ser Gln
3815	3820	3825
Val Phe Asn Thr Leu Thr Glu	Val Ile Gln Gly Pro	Cys Thr Gln
3830	3835	3840
Asn Gln Gln Ala Leu Ala His	Ser Arg Leu Trp Asp	Ala Val Gly
3845	3850	3855
Gly Phe Leu Phe Leu Phe Ser	His Met Gln Asp Lys	Leu Ser Lys
3860	3865	3870
His Ser Ser Gln Val Asp Leu	Leu Lys Glu Leu Leu	Asn Leu Gln
3875	3880	3885
Lys Asp Met Ile Thr Met Met	Leu Ser Met Leu Glu	Gly Asn Val
3890	3895	3900
Val Asn Gly Thr Ile Gly Lys	Gln Met Val Asp Thr	Leu Val Glu
3905	3910	3915
Ser Ala Ser Asn Val Glu Leu	Ile Leu Lys Tyr Phe	Asp Met Phe
3920	3925	3930
Leu Lys Leu Lys Asp Leu Thr	Ser Thr Pro Ser Phe	Met Glu Ile

3935	3940	3945
Asp Ser Asn Gly Asp Gly Trp Ile Met Pro Lys Asp Phe Arg Glu 3950 3955 3960		
Lys Met Glu Gln Gln Lys Ser Tyr Thr Pro Glu Glu Ile Asp Phe 3965 3970 3975		
Leu Leu Ala Cys Cys Glu Thr Asn His Asp Gly Lys Ile Asp Tyr 3980 3985 3990		
Ile Gly Phe Val Asp Arg Phe His Glu Pro Ala Lys Glu Ile Gly 3995 4000 4005		
Phe Asn Leu Ala Val Leu Leu Thr Asn Leu Ser Glu His Met Pro 4010 4015 4020		
Asn Glu Pro Arg Leu Ala Arg Phe Leu Glu Thr Ala Gly Ser Val 4025 4030 4035		
Leu Asn Tyr Phe Glu Ser Phe Leu Gly Arg Ile Glu Ile Met Gly 4040 4045 4050		
Ser Ser Lys Arg Ile Glu Arg Val Tyr Phe Glu Ile Lys Glu Ala 4055 4060 4065		
Asn Ile Glu Gln Trp Glu Lys Pro Gln Ile Lys Glu Ser Lys Arg 4070 4075 4080		
Ala Phe Phe Tyr Ser Ile Val Thr Glu Gly Gly Asp Lys Glu Lys 4085 4090 4095		
Leu Glu Ala Phe Val Asn Phe Cys Glu Asp Ala Ile Phe Glu Met 4100 4105 4110		
Thr His Ala Ser Gly Leu Met Ala Ser Asp Asp Asp Gly Gly Thr 4115 4120 4125		
Val Arg Arg Asp Gln Ala Phe Thr Tyr Ile Ser Glu Glu Glu Glu 4130 4135 4140		
Glu Arg Ala Ala Arg Asp Pro Ile Lys Arg Thr Ile Gln Ala Val 4145 4150 4155		
Lys Asp Gly Leu Ser Tyr Ser Met Tyr Met Ile Ser Pro Ser Asn 4160 4165 4170		
Ile Lys His Gln Ile Thr Val Leu Gln Ser Lys Ser Phe Pro Glu 4175 4180 4185		
Ile Ile Val Gly Phe Phe Lys Met Ile Phe Tyr Ala Phe Tyr Tyr 4190 4195 4200		
Ser Gly Phe Gly Val Ser Val Val Ile Lys Tyr Leu Val Asn Ile 4205 4210 4215		
Leu Met Ser Leu Met Arg Gly Pro Ala Gln Glu Glu Glu Glu Pro 4220 4225 4230		
Ile Pro Glu Ala Glu Pro Ser Leu Arg Ala Leu Pro Pro Leu Pro		

4235	4240	4245
Leu Glu Glu Pro Pro Gly Thr	Val Gln Ala Phe Gly	Leu Asp Ile
4250	4255	4260
Ser Lys Glu Glu Asn Gly Gln	Tyr Arg Met Ala Pro	His Glu Ser
4265	4270	4275
Pro Ala Leu Ser Pro Ser Ser	Ser Ile Glu Glu Thr	Gly Glu Ser
4280	4285	4290
Ser Pro Glu Asp Gly Ala Ala	Glu Leu Thr Gly Glu	Gly Val Pro
4295	4300	4305
Pro Gly Glu Gln Met Thr Leu	Val Asp Leu Leu Gly	Gly Glu Ala
4310	4315	4320
Ala Lys Arg Ala Ala Gln Glu	Arg Thr Glu Ala Gln	Lys Ala Gln
4325	4330	4335
Glu Ala Thr Leu Ala Ser Ile	Glu Ala Glu Ser Lys	Lys Ala Ser
4340	4345	4350
Thr Glu Thr Lys Glu Pro Ala	Ala Val His Gln Ile	Asp Phe Ser
4355	4360	4365
Lys Tyr Thr Lys Lys Cys Val	Ser Tyr Leu Ala Arg	Asn Phe Tyr
4370	4375	4380
Asn Leu Lys Tyr Val Ala Leu	Val Leu Ala Phe Cys	Ile Asn Phe
4385	4390	4395
Met Leu Leu Phe Tyr Lys Val	Thr Thr Leu Gly Asp	Asp Glu Asp
4400	4405	4410
Gly Glu Gly Gly Ser Gly Glu	Ser Leu Met Gly Leu	Gly Ser Gly
4415	4420	4425
Leu Gly Ser Gly Leu Gly Ile	Leu Glu Thr Gly Ser	Gly Gly Gly
4430	4435	4440
Glu Gly Gly Ser Gly Asp Gly	Glu Gly Glu Glu Glu	Asp Pro Pro
4445	4450	4455
Glu Lys Val His Val Asp Glu	Asp Phe Phe Tyr Met	Glu His Val
4460	4465	4470
Leu Arg Ile Ala Ala Ile Leu	His Ser Leu Val Ser	Leu Cys Met
4475	4480	4485
Leu Ile Ala Tyr Tyr His Leu	Lys Val Pro Leu Ala	Ile Phe Lys
4490	4495	4500
Arg Glu Lys Glu Ile Ala Arg	Arg Leu Glu Phe Asp	Gly Leu Phe
4505	4510	4515
Ile Ala Glu Gln Pro Glu Asp	Asp Asp Ile Lys Ser	His Trp Asp
4520	4525	4530
Lys Leu Val Ile Ser Ala Lys	Thr Phe Pro Val Asn	Tyr Trp Asp



4535		4540		4545
Lys Phe Val Lys Lys Lys	Val Arg Gln Lys Tyr Ser	Glu Thr Tyr		
4550	4555	4560		
Asp Phe Asp Ser Ile Ser	Asn Leu Leu Gly Met Glu	Lys Thr Ala		
4565	4570	4575		
Phe Ala Ala Gln Glu Ala	Asn Glu Gly Gly Gly Phe	Phe His Phe		
4580	4585	4590		
Ile Thr Asn Ile Asp Trp	Arg Tyr Gln Ile Trp Lys	Ala Gly Val		
4595	4600	4605		
Thr Ile Thr Asp Asn Ser	Phe Leu Tyr Ser Leu Trp	Tyr Phe Ser		
4610	4615	4620		
Phe Ser Val Met Gly Asn	Phe Asn Gln Phe Phe Phe	Ala Ala His		
4625	4630	4635		
Leu Leu Asp Val Ala Val	Gly Phe Lys Thr Leu Arg	Thr Ile Leu		
4640	4645	4650		
Gln Ser Val Thr His Asn	Gly Lys Gln Leu Val Leu	Thr Val Met		
4655	4660	4665		
Leu Leu Thr Ile Ile Val	Tyr Ile Tyr Thr Val Ile	Ala Phe Asn		
4670	4675	4680		
Phe Phe Arg Lys Phe Tyr	Val Gln Glu Asp Asp Asp	Gly Glu Glu		
4685	4690	4695		
Gly Asp Arg Lys Cys His	Asp Met Ala Thr Cys Phe	Val Phe His		
4700	4705	4710		
Leu Tyr Lys Gly Val Arg	Ala Gly Gly Gly Ile Gly	Asp Glu Ile		
4715	4720	4725		
Gly Asp Pro Asp Gly Asp	Glu Tyr Glu Val Tyr Arg	Ile Leu Phe		
4730	4735	4740		
Asp Ile Thr Phe Phe Phe	Phe Val Ile Val Ile Leu	Leu Ala Ile		
4745	4750	4755		
Ile Gln Gly Leu Ile Ile	Asp Ala Phe Gly Glu Leu	Arg Asp Gln		
4760	4765	4770		
Leu Glu Ser Val Lys Glu	Asp Met Glu Ser Asn Cys	Phe Ile Cys		
4775	4780	4785		
Gly Ile Gly Lys Asp Tyr	Phe Asp Lys Val Pro His	Gly Phe Asp		
4790	4795	4800		
Thr His Val Ala Gln Glu	His Asn Leu Ala Asn Tyr	Met Phe Phe		
4805	4810	4815		
Leu Met His Leu Ile Asn	Lys Pro Asp Thr Glu Tyr	Thr Gly Gln		
4820	4825	4830		
Glu Thr Tyr Val Trp Asn	Met Tyr Gln Gln Arg Cys	Trp Asp Phe		

4835                      4840                      4845  
 Phe Pro Val Gly Asp Cys Phe Arg Lys Gln Tyr Glu Asp Glu Leu  
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 Gly Gly Gly Gly Ser  
 4865  
  
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 <212> PRT  
 <213> Caenorhabditis elegans  
  
 <400> 58  
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 Phe Leu Arg Thr Gly Asp Ile Val Cys Leu Ser Cys Val Ala Ser His  
                     20                      25                      30  
 Asn Arg Asp Gly Val Leu Gly Ser Glu Arg Val Cys Leu Cys Thr Glu  
                     35                      40                      45  
 Gly Phe Gly Asn Arg Met Cys Thr Leu Glu Asn Val Ser Asp Lys Asp  
                     50                      55                      60  
 Ile Pro Pro Asp Ile Ala Met Cys Met Leu Tyr Ile Asp Asn Ala Leu  
 65                      70                      75                      80  
 Ser Met Arg Ala Leu Gln Glu Met Met Ser Ala Asp Ser Asp His Lys  
                     85                      90                      95  
 Ser Ala Ser Gly Ala Gly Gly His Lys Thr Leu Leu Tyr Gly His Ala  
                     100                      105                      110  
 Val Gln Leu Lys His Val Gln Ser Glu Met Tyr Leu Ala Cys Leu Ser  
                     115                      120                      125  
 Ser Cys Ser Ser Asn Asp Lys Leu Ala Phe Asp Val Gly Val Gln Glu  
                     130                      135                      140  
 Thr Asn Glu Gly Glu Ala Cys Trp Trp Thr Ile His Pro Ala Ser Lys  
 145                      150                      155                      160  
 Gln Arg Ser Glu Gly Glu Lys Val Arg Val Gly Asp Asp Val Ile Leu  
                     165                      170                      175  
 Val Ser Val Ala Thr Glu Arg Tyr Leu His Met Ala Tyr Ser Lys Gly  
                     180                      185                      190  
 Tyr Met Val Ile Ala Ser Phe His Gln Thr Leu Trp Asn Ile Gln Ser  
                     195                      200                      205  
 Val Ser Ser Gly Ser Met Arg Thr Arg Asn Met Gly Phe Leu Phe Gly  
                     210                      215                      220  
 Asn Asp Val Leu Arg Leu Phe His Gly Asn Asp Glu Cys Leu Thr Ile  
 225                      230                      235                      240

205

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Ser Asn Pro Gln Ser Ala Glu Gly Ile Leu Asp Val Leu Tyr Cys Val
      565                               570                               575

Leu Thr Glu Ser Pro Glu Ala Leu Asn Met Ile Asn Glu Gly His Ile
      580                               585                               590

Arg Ser Val Ile Ser Leu Leu Glu Lys Val Gly Arg Asp Pro Lys Val
      595                               600                               605

Leu Asp Val Leu Ser Ser Leu Cys Glu Gly Asn Gly Met Ala Val Arg
      610                               615                               620

Ser Ser Gln Asn Leu Ile Thr Gln Tyr Leu Leu Pro Gly Lys Asp Leu
      625                               630                               635                               640

Leu Leu Gln Thr Ser Met Arg Asp His Val Ser Ser Met Met Pro Asn
      645                               650                               655

Val Met Leu Gly Val Val Glu Gly Ser Ala Leu Phe Arg Lys Trp Tyr
      660                               665                               670

Phe Glu Ala Glu Val Glu His Ile Glu Thr Met Thr Lys Gln Thr Pro
      675                               680                               685

Tyr Leu Arg Ile Gly Trp Ala Asn Ser Val Gly Phe Lys Pro Phe Pro
      690                               695                               700

Gly Ser Gly Asp Lys Met Gly Cys Asn Gly Val Gly Asp Asp Phe Tyr
      705                               710                               715                               720

Ser Tyr Gly Phe Asp Gly Lys Ser Met Tyr Phe Gly Gly Lys Ser Arg
      725                               730                               735

Arg Val Gly His Lys Leu Leu Glu Lys Gly Asp Val Ile Gly Cys Ser
      740                               745                               750

Ile Asp Leu Thr Ile Pro Glu Ile Lys Phe Ser Val Asn Gly Thr Tyr
      755                               760                               765

Met Ser Gly Ser Phe Lys Lys Phe Asn Ile Asp Gly Tyr Phe Phe Pro
      770                               775                               780

Val Met Ser Leu Ser Ala Lys Val Ser Cys Arg Phe Ile Leu Gly Gly
      785                               790                               795                               800

Asn Gln Gly Arg Leu Arg Tyr Gly Pro Pro Thr Gly Phe Ser Ala Val
      805                               810                               815

Val Glu Ala Val Asn Gly Glu Leu Gln Ile Thr Asp Cys Leu Ser Phe
      820                               825                               830

Gly Asp Leu Gly Lys Asn Ile Phe Ser Gly Pro Gln Thr Ile Phe Asn
      835                               840                               845

Asn Leu Glu Pro Phe Ile Pro Thr Pro Ile Asp Val Ser Ala Thr Gln
      850                               855                               860

Leu Asn His His Ala Thr Glu Met His Gln Lys Tyr Ala Glu Asn Leu
      865                               870                               875                               880

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His Glu Leu Trp Ala Met Arg Lys Ile Glu Leu Gly Trp Ser Tyr Gly  
 885 890 895  
 Glu Thr Arg Ser Glu Thr Ser Arg Lys His Pro Cys Leu Thr Lys Phe  
 900 905 910  
 Glu Tyr Leu Pro Glu Thr Glu Lys Lys Tyr Asn Ile Leu Leu Ala Leu  
 915 920 925  
 Thr Thr Met Lys Thr Ile Glu Ala Leu Gly Tyr His Leu Ile Thr Glu  
 930 935 940  
 Asp Pro Pro Cys Arg Leu Arg Ala Val Arg Leu Gly Pro Asn Phe Gln  
 945 950 955 960  
 Gln Gln Asn Gly Tyr Lys Pro Gly Pro Leu Asp Thr His Glu Ile Gln  
 965 970 975  
 Leu Pro Ala Glu Leu Gln Pro Leu Thr Glu Ala Leu Ala Arg Asn Thr  
 980 985 990  
 His Asn Ile Trp Ala Lys Glu Lys Ile Lys Arg Gly Trp Thr Phe Gly  
 995 1000 1005  
 Leu Ser Glu His Val Asp Ala Thr Gln Lys Arg Ser Pro His Leu  
 1010 1015 1020  
 Val Pro Tyr Glu Gln Val Asp Glu Arg Ile Lys Gln Ala Asn Arg  
 1025 1030 1035  
 Glu Ser Ala Ala Glu Asn Ile Arg Ala Leu Gln Leu Phe Gly Ile  
 1040 1045 1050  
 Phe Leu Glu Pro Pro Ala His Glu His Asp Glu Val Ala Glu Lys  
 1055 1060 1065  
 Glu Leu Arg Ala Arg Lys Asp Asn Thr Arg Thr Tyr Arg Ala Glu  
 1070 1075 1080  
 Ala Thr Tyr Ala Val Cys Gly Gly Lys Trp Tyr Phe Glu Phe Glu  
 1085 1090 1095  
 Ile Leu Thr Ala Gly Tyr Met Lys Ile Gly Trp Met Asp Ile Gly  
 1100 1105 1110  
 Ser Thr Pro Glu Ile Gln Leu Gly Ala Asp Asp Arg Ser Tyr Ala  
 1115 1120 1125  
 Phe Asp Gly Tyr Leu Gly Arg Lys Trp His Gln Gly Ala Glu Thr  
 1130 1135 1140  
 Tyr Gly Lys Glu Trp Lys Ile Gly Asp Val Val Gly Cys Phe Leu  
 1145 1150 1155  
 Asp Leu Asn Asp Arg Thr Ile Ser Phe Ser Leu Asn Gly Glu Leu  
 1160 1165 1170  
 Leu Leu Asp Pro Ser Gly Ser Glu Met Ala Phe Asp Asn Val Val  
 1175 1180 1185

Cys	Gly	Asp	Gly	Leu	Val	Pro	Ala	Met	Thr	Leu	Gly	Ser	Gly	Gln
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Arg	Gly	Arg	Leu	Asn	Phe	Gly	Gln	Gln	Ser	Asn	Ser	Leu	Lys	Phe
	1205					1210					1215			
Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	Phe	Cys	Val
	1220					1225					1230			
Asn	Met	Tyr	Arg	Thr	Met	Pro	Met	Trp	Phe	Ala	Lys	His	Phe	Pro
	1235					1240					1245			
Arg	Phe	Glu	Asp	Ile	Ser	Thr	Leu	Lys	Ser	Gly	Ser	Ile	Leu	Glu
	1250					1255					1260			
Val	Ser	Arg	Ile	Pro	Ala	Thr	Gly	Asn	Ser	Pro	Pro	Cys	Leu	Lys
	1265					1270					1275			
Ile	Leu	Gln	Lys	Val	Thr	Ile	Ser	Glu	Gly	Gly	Pro	Ser	Glu	Lys
	1280					1285					1290			
Ala	Lys	Met	Glu	Tyr	Ile	Lys	Leu	Ser	Leu	Pro	Val	Lys	Cys	Asn
	1295					1300					1305			
Asp	Thr	Phe	Val	Lys	Asn	Lys	Asp	Lys	Glu	Thr	Ile	Arg	Arg	Gln
	1310					1315					1320			
Leu	Gln	Glu	Tyr	Lys	Pro	Arg	Ser	Gln	Ser	Val	Val	Ser	Gln	Ile
	1325					1330					1335			
Arg	Ala	Pro	Gly	Ile	Pro	Lys	Glu	Phe	Asp	Asp	Asn	Lys	Glu	Lys
	1340					1345					1350			
Lys	Gly	Phe	Leu	Arg	Ser	Met	Leu	Gly	Ser	Lys	Asp	Ser	His	Glu
	1355					1360					1365			
Ser	Asp	Asp	Asp	Arg	Arg	Ser	Arg	Thr	Asn	Ser	Lys	Gln	Pro	Ser
	1370					1375					1380			
Val	Asp	Gly	Asp	Glu	Pro	Pro	Ala	Val	Arg	Arg	Ser	Leu	Leu	Glu
	1385					1390					1395			
Leu	Pro	His	Asp	Glu	Arg	Gln	Ile	Ala	Glu	Asp	Ser	Met	Arg	Asp
	1400					1405					1410			
Leu	Asn	Asp	Arg	His	Ser	Glu	Lys	Pro	Lys	Lys	Gly	Gly	Leu	Leu
	1415					1420					1425			
Ser	Arg	Leu	Arg	Asp	Ser	Ser	Asn	Thr	Arg	Lys	Asn	Phe	Arg	Asp
	1430					1435					1440			
Ser	Asp	Arg	Arg	Lys	Glu	Glu	Lys	Ala	Ala	Gln	Leu	Arg	Gln	Met
	1445					1450					1455			
Lys	Ala	Asn	Ser	Arg	Ser	Phe	Asp	Ala	Gly	Ser	Leu	Asp	Thr	Ser
	1460					1465					1470			
Thr	Leu	Pro	Thr	Gly	Gln	Lys	Asp	Val	Leu	Ala	Ser	Ser	Glu	Met
	1475					1480					1485			

Pro	Leu	Ser	Gly	Pro	Gly	Arg	Gln	Leu	Thr	Ile	Lys	Arg	Ser	Ser
1490						1495					1500			
Ile	Lys	Lys	Asn	Lys	Lys	Gly	Lys	Lys	Ala	Glu	Ile	Ala	Leu	Glu
1505						1510					1515			
Lys	Met	Glu	Arg	Glu	Lys	Lys	Gly	Ser	Ile	Ile	Pro	Met	Asp	Ala
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Gln	Leu	Asp	Val	Leu	Gln	Glu	Gly	Asp	Ala	His	Ala	Leu	Val	His
1535						1540					1545			
His	Lys	Asp	Lys	Val	Asp	Glu	Tyr	Tyr	Tyr	Gly	Ile	Arg	Ile	Phe
1550						1555					1560			
Pro	Gly	Gln	Asp	Pro	Ser	Gln	Val	Trp	Val	Gly	Trp	Val	Thr	Thr
1565						1570					1575			
Gln	Tyr	His	Tyr	Tyr	Asn	Val	Asn	Phe	Asp	Gly	Ser	Gln	Gly	Val
1580						1585					1590			
Arg	Lys	Cys	Arg	Phe	Ser	Glu	Ala	Asp	His	His	Gly	Thr	Thr	Val
1595						1600					1605			
Asp	Ser	Val	Gln	Ser	Gln	Asn	Cys	Tyr	Met	Val	Asn	Val	Ser	Glu
1610						1615					1620			
Leu	Leu	Ala	Thr	Thr	Pro	Asp	Val	Ala	Asn	Thr	Lys	Val	Ser	Gly
1625						1630					1635			
Thr	Leu	Ile	Gly	Cys	Ile	Ile	Asp	Thr	Ser	Ile	Gly	Glu	Leu	Ser
1640						1645					1650			
Phe	Gln	Val	Gly	Ser	Thr	Asp	Thr	Gly	Ile	Lys	Phe	Lys	Leu	Glu
1655						1660					1665			
Pro	Gly	Ala	Met	Leu	Phe	Pro	Ala	Ala	Phe	Val	Thr	Pro	Thr	Ala
1670						1675					1680			
Thr	Glu	Ile	Leu	Gln	Phe	Glu	Leu	Gly	Arg	Ile	Lys	Tyr	Thr	Phe
1685						1690					1695			
Pro	Leu	Ser	Ala	Ala	Met	Phe	Lys	Ser	Cys	Glu	Lys	Ser	Leu	Val
1700						1705					1710			
Pro	Phe	Cys	Pro	Pro	Arg	Leu	Thr	Val	Glu	Gln	Ile	Glu	Ser	Val
1715						1720					1725			
Tyr	Trp	Ala	Arg	Val	Pro	Asn	Glu	Thr	Leu	Arg	Thr	Thr	Ala	Leu
1730						1735					1740			
Lys	Leu	Ser	Glu	Val	Arg	Gly	Trp	Ser	Val	Leu	Cys	Asn	Asp	Pro
1745						1750					1755			
Val	Arg	Ile	Met	Ser	Val	Tyr	Ile	Pro	Glu	Lys	Asp	Gln	Ser	Leu
1760						1765					1770			
Asp	Ile	Leu	Glu	Met	Ile	Glu	Met	Pro	Asp	Met	Leu	Glu	Phe	His
1775						1780					1785			

Arg	Gln	Thr	Leu	Asn	Leu	Tyr	Cys	Lys	Leu	Ala	Ser	His	Gly	Asn
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His	Lys	Val	Ala	His	Thr	Leu	Cys	Gln	His	Ile	Asp	Glu	Asp	Gln
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Ile	Met	Tyr	Ala	Ile	Lys	Ser	His	Tyr	Leu	Ser	Gly	Pro	Met	Arg
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Gln	Gly	Phe	His	Asp	Leu	Leu	Ile	Gly	Leu	His	Leu	Met	Ser	His
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Thr	Ala	Ala	Arg	Asn	Ser	Met	Ala	Lys	Glu	Tyr	Val	Ile	Pro	Leu
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Val	Pro	Gln	Leu	Gln	Ile	Lys	Asn	Val	Leu	Asp	Pro	Asp	Ser	Glu
1865						1870					1875			
Ser	Arg	Tyr	Pro	Gln	Ile	Thr	Gly	Glu	Ser	Val	Ser	Met	Leu	Ser
1880						1885					1890			
Gln	Met	Ala	Ser	Glu	Pro	Val	Lys	Lys	His	Val	Ser	Arg	Glu	Asp
1895						1900					1905			
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1910						1915					1920			
Lys	His	Val	Met	Glu	Ser	Leu	Gln	Ser	Ala	Thr	His	His	Ala	Val
1925						1930					1935			
Met	Asn	Cys	Arg	Asp	Leu	Ile	Gly	Gly	Asp	Asn	Thr	Asn	His	Phe
1940						1945					1950			
Glu	Pro	Leu	Phe	Lys	Leu	Phe	Asp	Gln	Leu	Leu	Val	Ile	Gly	Leu
1955						1960					1965			
Ile	Asn	Asp	Glu	Glu	Leu	Glu	Cys	Leu	Leu	Arg	Leu	Ile	His	Pro
1970						1975					1980			
Gln	Ala	Phe	Asp	Glu	Asn	Tyr	Glu	Thr	Gly	Thr	Thr	Gln	Lys	Gly
1985						1990					1995			
Leu	Thr	Gln	Leu	Glu	Leu	Ala	Glu	Pro	Val	Lys	Ile	Gln	Leu	Val
2000						2005					2010			
Ser	Ile	Leu	Asp	His	Leu	Cys	Asp	Ile	Gln	Leu	Arg	Tyr	Arg	Ile
2015						2020					2025			
Glu	Ser	Leu	Val	Ala	Phe	Thr	Glu	Gly	Phe	Val	Gly	Glu	Leu	Gln
2030						2035					2040			
Ser	Asp	Gln	Cys	Lys	Arg	Tyr	Met	Glu	Ile	Lys	Gln	Thr	Asp	Met
2045						2050					2055			
Pro	Pro	Ala	Glu	Ala	Ala	Lys	Lys	Thr	Lys	Glu	Phe	Arg	Cys	Pro
2060						2065					2070			
Pro	Lys	Glu	Gln	Met	Phe	Arg	Leu	Leu	Met	Cys	Lys	Val	Lys	Glu
2075						2080					2085			



Glu Arg Asp Pro Glu Leu Met	Glu Glu Asp Ala Asp Val Asp Gln
2090	2095 2100
Cys Pro Met Ala Glu Gly Leu	Gln Gln Gln Leu Arg Asp Phe Cys
2105	2110 2115
Glu Leu Leu Val Gly Lys Ile	Gly Asn Val Lys Glu Gly Asp Ser
2120	2125 2130
Asp Asp Gln Leu Ala Leu Ile	Glu Ser Glu Glu Gly Ser Trp Val
2135	2140 2145
Asp Ser Phe Ala Arg Ile Val	Val Lys Val Pro Pro Pro Val Leu
2150	2155 2160
Glu Glu Gly Met Glu Met Gln	Lys Lys Gly Thr Gln Asn Phe Arg
2165	2170 2175
Glu Ile Ile Val Thr Met Leu	Arg Glu Trp Ala Gln Ala Asp Phe
2180	2185 2190
Ile Glu Ser Lys Ser Leu Ile	Arg Asn Met Phe Arg Leu Leu Leu
2195	2200 2205
Arg Gln Tyr Ser Gly Ile Arg	Glu Ile Arg Asp Ala Met Ser Gln
2210	2215 2220
Thr Tyr Val Phe His Glu Arg	Asn Glu Lys Asp Val Thr Asp Phe
2225	2230 2235
Leu Val Tyr Leu Ile Gln Ile	Arg Glu Leu Leu Thr Val Gln Phe
2240	2245 2250
Glu His Thr Glu Glu Ala Ile	Leu Lys Arg Gly Leu Trp Lys Leu
2255	2260 2265
Met Asn Asn Arg Ile Phe Phe	Gln His Pro Asp Leu Met Arg Leu
2270	2275 2280
Leu Ser Val His Glu Asn Val	Met Ser Ile Met Met Asn Ile Leu
2285	2290 2295
Thr Ala Gln Gln Gly Thr Val	Glu His Glu Gly Asp Glu Leu Lys
2300	2305 2310
Glu Lys Ala Pro Ile Lys Asp	Ala Ser Glu Met Val Val Ala Cys
2315	2320 2325
Ser Arg Phe Leu Cys Tyr Phe	Cys Arg Thr Ser Arg Gln Asn Gln
2330	2335 2340
Lys Ala Met Phe Glu His Leu	Ser Phe Leu Leu Asp Asn Ala Thr
2345	2350 2355
Met Leu Leu Ala Arg Pro Ser	Leu Arg Gly Ser Val Pro Leu Asp
2360	2365 2370
Val Ala Tyr Ser Ser Phe Met	Asp Asn Asn Glu Leu Ala Leu Ala
2375	2380 2385

Leu Lys	Glu Glu Glu Leu	Asp	Lys Val Ala Val	Tyr	Leu Ser Arg
2390		2395		2400	
Cys Gly	Leu Gln Pro Asn	Ser	Glu Leu Ile Thr	Lys	Gly Tyr Pro
2405		2410		2415	
Asp Ile	Gly Trp Asp Pro	Val	Glu Gly Glu Arg	Tyr	Ile Asp Phe
2420		2425		2430	
Leu Arg	Phe Cys Val Trp	Ile	Asn Gly Glu Asn	Val	Glu Glu Asn
2435		2440		2445	
Ala Asn	Leu Val Ile Arg	Leu	Leu Ile Arg Arg	Pro	Glu Cys Leu
2450		2455		2460	
Gly Val	Ala Leu Lys Gly	Glu	Gly Gln Gly Leu	Phe	Ser Ala Phe
2465		2470		2475	
Lys Glu	Ala Ile Ala Leu	Ser	Glu Asp Ile Arg	Leu	Leu Glu Asn
2480		2485		2490	
Asp Ser	His Pro Ser Leu	Leu	Ser Ser Gly Leu	Leu	Gly Glu Asn
2495		2500		2505	
Pro Thr	Tyr Pro Ser Lys	Asp	Ala Glu Gly Glu	Asp	Tyr Ile Asp
2510		2515		2520	
Leu Gly	Ala Ala Thr Leu	Asp	Phe Tyr Ser Ser	Leu	Val Asp Leu
2525		2530		2535	
Leu Ala	Lys Cys Ala Pro	Asp	Pro Met Ala Ile	Gln	Ala Gly Lys
2540		2545		2550	
Gly Asp	Ser Leu Arg Ala	Arg	Ala Ile Leu Arg	Ser	Leu Ile Ser
2555		2560		2565	
Leu Asp	Asp Leu Gly Gln	Ile	Leu Ala Leu Arg	Phe	Thr Ile Pro
2570		2575		2580	
Asn Leu	Ala Ala Pro Ser	Ile	Glu Asp Thr Gly	Pro	Leu Pro Gly
2585		2590		2595	
Leu Leu	Pro Asn His Lys	Gly	Ser Val Leu Leu	Phe	Leu Asp Arg
2600		2605		2610	
Val Tyr	Gly Ile Asp Gln	Gln	Asp Met Leu Phe	His	Val Leu Glu
2615		2620		2625	
Gln Ser	Phe Leu Pro Asp	Leu	Arg Ala Ala Thr	Met	Met Asp Ser
2630		2635		2640	
Pro Arg	Ala Leu Glu Ser	Asp	Thr Ala Leu Ala	Leu	Asn Arg Tyr
2645		2650		2655	
Leu Cys	Asn Ser Val Leu	Pro	Leu Leu Thr Asn	His	Ser His Phe
2660		2665		2670	
Phe Ala	Asp Ala Glu His	His	Ser Ala Leu Leu	Asp	Ala Thr Leu
2675		2680		2685	

His Thr	Val Tyr	Arg Met	Asn	Arg Leu	Lys Ser	Leu	Thr Lys	Asn	
2690			2695			2700			
Gln Arg	Asp Ala	Val Ser	Asp	Phe Leu	Val Ala	Ile	Thr Arg	Glu	
2705			2710			2715			
Leu Pro	Pro Ala	Met Met	Ile	Lys Leu	Leu Lys	Lys	Val Ile	Thr	
2720			2725			2730			
Asp Ile	Leu Thr	Met Asn	Asp	Met Asn	Val Leu	Val	Pro Leu	Arg	
2735			2740			2745			
Leu Ile	Thr Leu	His Tyr	Glu	Arg Cys	Gly Lys	Tyr	Tyr Gly	Ser	
2750			2755			2760			
Gly Asn	His Tyr	Gly Val	Ala	Ser Glu	Gln Glu	Lys	Arg Leu	Ser	
2765			2770			2775			
Met Leu	Leu Phe	Asp Ala	Ile	Phe Asp	Thr Leu	Gly	Ser Arg	Pro	
2780			2785			2790			
Tyr Asp	Pro Glu	Leu Phe	Gly	Lys Ala	Leu Pro	Cys	Met Thr	Ala	
2795			2800			2805			
Ile Gly	Ser Ala	Ile Ser	Pro	Asp Tyr	Thr Leu	Thr	Ser Gly	Leu	
2810			2815			2820			
Glu Asp	Val Arg	Asn Lys	Arg	Arg Glu	Glu Glu	Gly	Ala Trp	Ile	
2825			2830			2835			
Pro Arg	Thr Val	Asp Val	Ser	Arg Cys	Glu Ile	Asn	Arg Asp	Leu	
2840			2845			2850			
Glu Lys	Met Thr	Glu Leu	Phe	Ala Glu	His Phe	His	Asp Ser	Trp	
2855			2860			2865			
Ala Ser	Arg Lys	Leu Glu	Lys	Gly Trp	Val His	Gly	Asp Leu	Tyr	
2870			2875			2880			
Ser Arg	Ala Asn	Phe Thr	His	Pro Arg	Leu Lys	Pro	Phe Ala	Leu	
2885			2890			2895			
Leu Lys	Asp Phe	Glu Lys	Ser	Phe Tyr	Lys Glu	Arg	Cys Ser	Glu	
2900			2905			2910			
Cys Leu	Lys Ala	Leu Met	Ala	Trp Asn	Tyr Ser	Phe	Glu Met	Met	
2915			2920			2925			
Asp Arg	Asp Ala	Asn Asp	Arg	Ala Ser	Ala Ala	Arg	Thr Leu	Ser	
2930			2935			2940			
Gly Thr	Ser Ile	Ser Asn	Phe	Ala Pro	Lys Pro	Ile	Asp Leu	Ser	
2945			2950			2955			
Ser Met	Thr Leu	Glu Lys	Asp	Met Val	Asn Ala	Ala	Glu Lys	Met	
2960			2965			2970			
Ala Glu	His Ser	His Leu	Ile	Trp Ala	Lys Lys	Val	Met Asn	Asp	
2975			2980			2985			

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Leu Asn Thr Lys Gly Gly Phe Met Pro Ile Pro Leu Val Pro Trp
2990                               2995                   3000

Asp Leu Leu Thr Asp Phe Glu Arg Arg Lys Asp Arg Phe Arg Ala
3005                               3010                   3015

Ser Glu Ile Leu Lys Phe Leu Gln Tyr His Gly Tyr His Val Asn
3020                               3025                   3030

Cys Pro Lys Asp Glu Gln Ser Gln Asn Asp Arg Leu Lys Ser Glu
3035                               3040                   3045

Gly Glu Arg Thr Ser Val Glu Lys Arg Phe Ala Tyr Asn Leu Leu
3050                               3055                   3060

Glu Lys Leu Ile Thr Tyr Leu Glu Gln Ala Ser Leu Lys Met Lys
3065                               3070                   3075

Ser Val Lys Pro Ser Gln Glu Leu Thr Arg Arg Asn Ser Phe Lys
3080                               3085                   3090

Lys Glu Gly Gln Asp Val Lys Phe Phe Glu Lys Val Val Leu Pro
3095                               3100                   3105

Leu Met His Ala Tyr Phe Asn Ala His Lys Asn Tyr Phe Leu Glu
3110                               3115                   3120

Gly Ser Ser Ile Val Gln Thr Gly Thr Ala Ser Asn Lys Glu Lys
3125                               3130                   3135

Glu Met Val Ala Asn Leu Phe Cys Arg Leu Ala Ala Leu Leu Arg
3140                               3145                   3150

Ile Lys Asn Arg Ala Phe Gly Ser Val Ala Lys Ile Thr Val Lys
3155                               3160                   3165

Cys Leu Gln Gly Leu Thr Gln Ala Leu Asp Leu Arg Thr Leu Val
3170                               3175                   3180

Lys Val Asn Ser Asp Ile Val Arg Thr Ser Leu Leu Thr Phe Phe
3185                               3190                   3195

Asn Asn Cys Ala Asp Asp Leu Tyr Ala Ser Val Asn Glu Leu Lys
3200                               3205                   3210

Asp Gly Gly Gln Tyr Ser Leu Ile Arg Gly Gln Ala Leu Lys Ser
3215                               3220                   3225

Trp Asn Ser Phe Glu Phe Ala Asn Gln Met Ile Val Pro Val Leu
3230                               3235                   3240

Thr Thr Met Phe Ala His Leu Ala Arg Asn His Phe Gly Thr Asp
3245                               3250                   3255

Leu Leu Leu Asp Asp Ile Gln Ala Ala Cys Tyr Lys Ile Leu Asp
3260                               3265                   3270

Ser Leu Tyr Met Val Thr Gly Leu Ser Ser Ser Ile Ser His Arg
3275                               3280                   3285

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Lys Ser Ile Ser Gly Glu Ser Glu Lys His Arg Pro Gly Leu Gly  
 3290 3295 3300  
 Gln Cys Leu Ala Ala Phe Ala Ser Cys Phe Pro Val Ala Phe Leu  
 3305 3310 3315  
 Glu Pro Glu Phe Asn Lys Ser Asn Lys Phe Ser Val Leu Ala Lys  
 3320 3325 3330  
 Ser Gln Asp Gln Ser Val Gln Val Gln Glu Met Leu Gln Asn Leu  
 3335 3340 3345  
 Ser Thr His Ile Pro His Leu Glu Lys Leu Leu Thr Asp Leu Glu  
 3350 3355 3360  
 Thr Val Ala Asn Asn Asn Thr Met Tyr Ser Asp Val Pro Asn Val  
 3365 3370 3375  
 Tyr Asp Val Asp Leu Pro Leu Met Cys Ser Tyr Met Ala His Trp  
 3380 3385 3390  
 Phe Ser Val Gly Pro Asp Gly Lys Arg Asp Lys Glu Asp Gln Arg  
 3395 3400 3405  
 Ala Ser Val Val Gln Thr Thr Ser Val Ser Cys Asp His Ile Asn  
 3410 3415 3420  
 Arg Ile Phe Asn Ala Leu Leu Lys Met Ile Arg Asn His Val Gly  
 3425 3430 3435  
 Ile Glu Asn Ala Pro Trp Leu Cys Arg Val Asn Phe Phe Ala Val  
 3440 3445 3450  
 Gln Ile Ile Gln Asn Val Thr Ser Asp Pro Val Arg Glu Phe Val  
 3455 3460 3465  
 Leu Pro Ile Ala Glu Arg Leu Arg Arg Met Ser Glu Lys Ala Tyr  
 3470 3475 3480  
 Lys Glu Glu Glu His Met Arg Thr His Pro Asp Asp Ala Asp Glu  
 3485 3490 3495  
 Gly Thr Val Ala Glu Asp Asn Ala Arg Leu Val Arg Asp Thr Tyr  
 3500 3505 3510  
 Ala Phe Phe Pro Ile Leu Met Lys Tyr Thr Asp Leu His Arg Ala  
 3515 3520 3525  
 Gln Trp Leu Lys Thr Pro Thr Trp Glu Thr Asp Gly Val Tyr Glu  
 3530 3535 3540  
 Asn Val Ala Val Ile Phe Arg Ile Trp Ser Gln Ser Gln His Phe  
 3545 3550 3555  
 Lys Arg Glu Glu Leu Asn Tyr Val Ala Gln Phe Glu Glu Asp Ala  
 3560 3565 3570  
 Ala Ala Thr Gly Gly Gly Asp Met Lys Thr Gly Lys Ala Ala Ile  
 3575 3580 3585

Ala Glu	Arg Lys Lys Lys Arg	Arg Glu Gly Gln Ile	Lys Lys Asp
3590	3595	3600	
Lys His	Ala Ala Ser Ile Val	Ile Ala Cys Leu Lys	Arg Leu Leu
3605	3610	3615	
Pro Val	Gly Leu Asn Val Phe	Gly Gly Arg Glu Leu	Asp Ile Val
3620	3625	3630	
Gln Gln	Ser Lys Glu Lys Phe	Ile Gln Lys Glu Thr	Glu Glu Lys
3635	3640	3645	
Ile Arg	Glu Phe Ile Lys Gly	Leu Leu Glu Ile Pro	Val Lys Thr
3650	3655	3660	
Asp Pro	Thr Asp Lys Asn Ala	Trp Gln Leu Ser Leu	Tyr Arg Lys
3665	3670	3675	
Ile Gly	Lys Ser Gln Met Arg	Gly Lys Asp Glu Met	Ser Gln Asp
3680	3685	3690	
Ala Val	Ile Glu Lys Ile Phe	Asn Met Gly Gln Val	Ser Ala Ile
3695	3700	3705	
Leu His	Thr Met Thr Ser Arg	Met Glu Lys Glu Asp	Ile Trp Lys
3710	3715	3720	
Lys Val	Leu Thr Leu Gln Arg	Lys Arg Met Ala Ile	Ser Leu Ile
3725	3730	3735	
Thr Ala	Ser His Leu Tyr Lys	Thr Glu Leu His Arg	Gly Ile Asn
3740	3745	3750	
Phe Phe	Leu Pro Ala Phe Ser	Arg Leu Trp Met Glu	Glu Glu Asp
3755	3760	3765	
Ala Gly	Gln Asp Gln Leu Ile	Ala Asp Ile Cys Ser	Gly Val Glu
3770	3775	3780	
Glu Glu	Glu Gly Pro Arg Ile	Glu Ile Ile Met Glu	Glu Gly Val
3785	3790	3795	
Pro Ile	Val Ala Ser Ser Glu	Asp Thr Lys Glu Lys	Glu Thr Asn
3800	3805	3810	
Pro Asp	Pro Leu Lys Gln Leu	Ile Arg Cys Phe Gln	Arg Ala Ala
3815	3820	3825	
Thr Ser	Glu Glu Thr Ala Ala	Ser Ala Ile His Glu	Asp Ser Leu
3830	3835	3840	
Tyr Ile	Arg Phe Ala Asp Val	Met Ala Lys Ser Ile	His Ile Glu
3845	3850	3855	
Glu Glu	Asp Gly Glu Asp Gly	Glu Glu Gly Glu Ile	Asp Gln Ala
3860	3865	3870	
Ala Lys	Glu Glu Gln Ser Gln	Ala Leu Arg Gly Glu	Gln Ala Val
3875	3880	3885	

Leu	Ala	Ser	Arg	Gly	Ala	Ala	Ile	Met	Cys	Leu	Met	Tyr	Leu	Ser
3890						3895					3900			
Ala	Ser	Gly	Gly	Glu	Pro	Asn	Glu	Met	Val	Ala	Gln	Thr	Leu	Gln
3905						3910					3915			
Leu	Gly	Ile	His	Leu	Leu	Ser	Gly	Gly	Asn	Val	Glu	Ile	Gln	Lys
3920						3925					3930			
Met	Leu	Ile	Glu	Tyr	Leu	Gln	Leu	Lys	Lys	Asp	Val	Arg	Phe	Phe
3935						3940					3945			
Thr	Ser	Met	Ala	Gly	Leu	Met	Asn	Lys	Cys	Ser	Val	Leu	Asn	Leu
3950						3955					3960			
Glu	Met	Phe	Glu	Arg	Gln	Ile	Lys	Ala	Glu	Gly	Leu	Gly	Met	Gly
3965						3970					3975			
Ala	Glu	Leu	Ala	Ser	Gly	Asp	Asn	Gln	Asn	Leu	Asn	Asp	Ala	Asp
3980						3985					3990			
Phe	Thr	Cys	Ser	Leu	Phe	Arg	Phe	Leu	Gln	Leu	Thr	Cys	Glu	Gly
3995						4000					4005			
His	Asn	Leu	Glu	Phe	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Pro	Gly	His
4010						4015					4020			
Thr	Thr	Ser	Val	Asn	Leu	Ile	Asn	Cys	Thr	Val	Asp	Tyr	Leu	Leu
4025						4030					4035			
Arg	Leu	Gln	Glu	Ser	Val	Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser	Ser
4040						4045					4050			
Lys	Glu	Val	Ile	Asp	Glu	Gly	Gly	Lys	Glu	Tyr	Phe	Leu	Arg	Ala
4055						4060					4065			
Ile	Gln	Val	Cys	Ser	Gln	Val	Phe	Asn	Thr	Leu	Thr	Glu	Ser	Ile
4070						4075					4080			
Gln	Gly	Pro	Cys	Val	Gly	Asn	Gln	Met	Thr	Leu	Ala	Asn	Ser	Arg
4085						4090					4095			
Leu	Trp	Asp	Ala	Ile	Asn	Gly	Phe	Phe	Phe	Leu	Phe	Ala	His	Met
4100						4105					4110			
Met	Glu	Lys	Leu	Tyr	Lys	Asn	Ser	Thr	Gln	Leu	Glu	Leu	Leu	Arg
4115						4120					4125			
Glu	Phe	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Val	Leu	Met	Leu	Ser
4130						4135					4140			
Met	Leu	Glu	Gly	Asn	Val	Leu	Asn	Gly	Ser	Ile	Gly	Lys	Gln	Met
4145						4150					4155			
Val	Asp	Ala	Leu	Val	Glu	Ser	Gln	Pro	Ser	Val	Glu	Lys	Ile	Leu
4160						4165					4170			
Lys	Phe	Ser	Asp	Met	Phe	Leu	Lys	Leu	Lys	Asp	Leu	Thr	Thr	Ser
4175						4180					4185			

Gln Ala	Phe Gln Asp Phe Asp	Thr Asn Gln Asp Gly	Trp Ile Ser
4190	4195	4200	
Pro Lys	Glu Phe Gln Arg Ala	Met Glu Ser Gln Lys	Met Tyr Thr
4205	4210	4215	
Val Glu	Asp Ile Thr Tyr Leu	Met Met Cys Thr Asp	Val Asn Asn
4220	4225	4230	
Asp Gly	Lys Val Asp Tyr Met	Glu Phe Thr Glu Arg	Phe His Asn
4235	4240	4245	
Pro Ala	Arg Asp Ile Gly Phe	Asn Leu Ala Val Leu	Leu Val Asn
4250	4255	4260	
Leu Lys	Glu His Ile Thr Asn	Asp Pro Arg Leu Glu	Lys Ile Ile
4265	4270	4275	
Glu Lys	Ala Gln Thr Leu Leu	Glu Tyr Phe Asp Pro	Phe Leu Gly
4280	4285	4290	
Arg Ile	Glu Ile Met Gly Ser	Ser Lys Arg Val Glu	Lys Ile Tyr
4295	4300	4305	
Phe Glu	Ile Gln Glu Ser Trp	Leu Glu Gln Trp Gly	Lys Gln Gln
4310	4315	4320	
Ile Arg	Asp Ser Lys Asn Ser	Phe Leu Phe Asn Val	Leu Gln Asp
4325	4330	4335	
Asp Gly	Gly Asp Gln Gly Lys	Leu Glu Ala Phe Ile	Asn Phe Cys
4340	4345	4350	
Glu Asp	Thr Ile Phe Glu Met	Gln His Ala Ala Ala	Ile Ser Ser
4355	4360	4365	
Gly Asp	Ser Asp Thr Lys Met	Glu Arg Ala Ile Lys	Gln Arg Asp
4370	4375	4380	
Tyr Phe	Leu Gln Gln Thr Ser	Ala Asp His Ile Ser	Glu Thr Phe
4385	4390	4395	
Lys Ser	Gly Tyr Asn Tyr Gly	Ile Ser Ala Ala Ser	Ala Leu Ser
4400	4405	4410	
Pro Gln	Asn Ile Ser Thr Thr	Met Arg Asn Val Ser	Ser Ser Val
4415	4420	4425	
Arg Gln	Met Ser Trp Thr Gln	Leu Leu Tyr Ala Val	Ile Ile Leu
4430	4435	4440	
Phe Ile	Arg Ala Gly Leu Ala	Ile Gly Trp Ala Gly	Tyr Leu Leu
4445	4450	4455	
Leu Met	Thr Ile Phe Arg Phe	Gly Tyr Phe Leu Thr	Thr Ser Ser
4460	4465	4470	
Glu Glu	Glu Glu Ala Ala Arg	Gln Glu Lys Glu Gln	Ala Lys Met
4475	4480	4485	



Asn	Asn	Glu	His	Pro	Ser	Phe	Asn	Pro	Pro	Ile	Ile	Gln	Glu	Phe
4490						4495					4500			
His	His	Ser	His	Val	Gly	Val	Thr	Ala	Phe	Gly	Val	Gly	Met	Asn
4505						4510					4515			
Ala	Asp	His	Leu	Asn	Val	Asn	Ser	Leu	Pro	Asp	Phe	Val	Pro	Pro
4520						4525					4530			
Glu	Arg	Pro	Glu	Thr	Pro	Glu	Thr	Val	Leu	Glu	Glu	Glu	Lys	Pro
4535						4540					4545			
Leu	Asn	Gln	Glu	Thr	Ser	Pro	Pro	Thr	Ser	Pro	Thr	Ser	Pro	Ala
4550						4555					4560			
Ser	Lys	Ala	Pro	Ser	Ile	Tyr	Glu	Ser	Ile	Gly	Ala	Pro	Gln	Met
4565						4570					4575			
Val	Gln	Leu	Gln	Ser	Glu	Ala	Asp	Phe	Gln	Gln	Gly	Gln	Tyr	Glu
4580						4585					4590			
Pro	Lys	Ile	Ala	Glu	Ser	Asn	Ser	Thr	Lys	Ser	Arg	Gly	Ser	Ile
4595						4600					4605			
Leu	Asn	Met	Leu	Ala	Arg	Asn	Phe	Lys	Thr	Ile	Glu	Lys	Ile	Thr
4610						4615					4620			
Leu	Tyr	Leu	Ala	Phe	Phe	Ile	Asn	Val	Ile	Leu	Leu	Phe	His	Arg
4625						4630					4635			
Val	Asp	Ile	Ser	His	Ala	Glu	Asn	Ala	Glu	Ala	Ala	Ser	Glu	Gly
4640						4645					4650			
Asp	Asp	Asp	Glu	Asp	Ala	Leu	Glu	Ser	Ile	Phe	Ile	Thr	Gly	Met
4655						4660					4665			
Gln	Phe	Pro	Tyr	Val	Glu	Tyr	Glu	Ile	Thr	Gly	Trp	Met	Leu	Ala
4670						4675					4680			
Gln	Ile	Leu	Tyr	Trp	Ile	Ser	Val	Leu	His	Leu	Ser	Thr	Ser	Phe
4685						4690					4695			
Ala	Leu	Leu	Val	Ser	Phe	Tyr	Gln	Leu	Lys	Ile	Pro	Leu	Ile	Thr
4700						4705					4710			
Phe	Lys	Arg	Glu	Lys	Glu	Ile	Ala	Arg	Lys	Leu	Met	Phe	Asp	Gly
4715						4720					4725			
Cys	Trp	Ile	Thr	Glu	Glu	Asp	Ser	Glu	Glu	Leu	Gly	Ile	Val	Asp
4730						4735					4740			
Thr	Phe	Met	Trp	Tyr	Leu	Asp	Arg	Ile	Val	Val	Ser	Ala	Lys	Ser
4745						4750					4755			
Phe	Pro	Met	Met	Tyr	Trp	Asp	Lys	Phe	Val	Arg	Arg	Lys	Thr	Arg
4760						4765					4770			
Ser	Lys	Phe	Lys	Asp	Gln	Val	Asp	Glu	Glu	Thr	Leu	Thr	Ser	Ile
4775						4780					4785			

Leu Gly	Glu Glu Lys Met Ser	Thr Asp Ser Ser Tyr	Asp Tyr Arg
4790	4795	4800	
Tyr Ser	Cys Trp Leu Trp Ile	Gly Val Ile Leu Thr	Asn Gly Gln
4805	4810	4815	
Phe Leu	Tyr Arg Val Gly Tyr	Leu Leu Cys Ser Ala	Cys Gly Val
4820	4825	4830	
Phe Leu	Ser Pro Phe Phe Tyr	Ala Phe His Leu Ile	Asp Val Val
4835	4840	4845	
Leu Ser	Phe Pro Met Leu Lys	Ala Ile Leu Gln Ser	Val Thr His
4850	4855	4860	
Asn Leu	Gln Gln Leu Ile Leu	Thr Ile Met Met Thr	Leu Val Val
4865	4870	4875	
Val Tyr	Leu Tyr Thr Val Ile	Ala Phe Asn Phe Phe	Arg Lys Phe
4880	4885	4890	
Tyr Val	Gln Glu Gly Glu Glu	Gly Glu Glu Pro Asp	Arg Lys Cys
4895	4900	4905	
His Asn	Met Leu Thr Cys Phe	Ile Tyr His Phe Tyr	Ala Gly Val
4910	4915	4920	
Arg Ala	Gly Gly Gly Ile Gly	Asp Glu Leu Glu Ser	Pro Tyr Gly
4925	4930	4935	
Asp Asp	Leu Glu Tyr Pro Arg	Met Phe Tyr Asp Ile	Ser Phe Phe
4940	4945	4950	
Phe Phe	Val Ile Ile Ile Leu	Leu Ala Ile Met Gln	Gly Leu Ile
4955	4960	4965	
Ile Asp	Ala Phe Gly Glu Leu	Arg Asp Gln Gln Glu	Ser Ala Thr
4970	4975	4980	
Glu Lys	Leu Glu Ser Ser Cys	Phe Ile Cys Asp Ile	Gly Lys Glu
4985	4990	4995	
Thr Phe	Asp Arg Met Pro Arg	Gly Phe Glu Ile His	Thr Thr Lys
5000	5005	5010	
Glu His	Asn Phe Ala Asn Tyr	Leu Phe Phe Leu Gln	His Leu Val
5015	5020	5025	
Asn Lys	Asp Glu Thr Glu Tyr	Thr Gly Gln Glu Thr	Tyr Val Arg
5030	5035	5040	
Glu Lys	Tyr Asp Asn Arg Asp	Trp Asp Phe Phe Pro	Val Gly Glu
5045	5050	5055	
Cys Phe	Val Lys Gln Tyr Glu	Asp Gln Leu Leu Gln	Ser
5060	5065	5070	

&lt;210&gt; 59

&lt;211&gt; 5317

&lt;212&gt; PRT

&lt;213&gt; Hemicentrotus pulcherrimus

&lt;400&gt; 59

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Met Ala Ser Gln Asp Ala Glu Asp Glu Val Ser Phe Leu Arg Thr Gly
1           5           10           15

Asp Gln Leu Asn Leu Val Cys Ser Ser Gln Ser Leu Gly His Val Leu
          20           25           30

Leu Gly Ala Glu Gly Phe Gly Asn Arg Asn Cys Val Leu Glu Glu Ala
          35           40           45

Ser Asn Gln Asn Val Pro Pro Asp Leu Ser Ile Cys Val Phe Val Leu
          50           55           60

Asn Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Met Val Ile Thr Asp
65           70           75           80

Gln Ile Asp Gln Gly Gly Gln Ala Gly His Arg Thr Leu Leu Tyr Gly
          85           90           95

His Ala Met Leu Leu Gln His Ser Leu Ser Ser Met His Leu Ala Cys
          100          105          110

Leu Pro Thr Ser Ser Ser Lys Asp Lys Leu Ala Phe Asp Val Gly Leu
          115          120          125

Gln Glu Ser Thr Gln Gly Glu Ala Cys Trp Trp Thr Ile His Pro Val
          130          135          140

Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val Gly Asp Asp Leu
145          150          155          160

Ile Leu Val Asn Val Ala Thr Glu Arg Tyr Leu His Leu Ser Val Glu
          165          170          175

Arg Asp Asp Gln Pro Met Ile Val Val Ala Ser Phe Gln Gln Thr Leu
          180          185          190

Trp Thr Val Ala Pro Val Ser Ser Gly Ile Val Lys Ile Lys Ala Met
          195          200          205

Ala Lys Lys Tyr Gly Asp Thr Glu Lys Val Leu Gly Phe Leu Asn Gly
          210          215          220

Leu Asp Thr Leu Arg Phe Ser Arg Gly His Met Asp Glu Tyr Leu Thr
225          230          235          240

Val Pro Pro Val Gly Cys Lys Asp Asp Asp Asn Ile Ser Glu Val Ser
          245          250          255

Tyr Asp Thr Gly Ala Val Ala Gln Tyr Ala Arg Ser Leu Trp Arg Ala
          260          265          270

Glu Leu Ile Leu Lys Lys Trp Asn Gly Ser Tyr Val Ser Trp Gly Pro
          275          280          285

Pro Cys Arg Ile Arg His Leu Thr Ser Gly Lys Tyr Leu Ala Val Leu
          290          295          300

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Glu Asn Gly Thr Val Cys Ile Val Pro Arg Lys Ser Cys Asn Leu Asp  
 305 310 315 320  
 Asp Thr Ile Phe Cys Phe Gln Gln Ser Arg Glu Asp Leu Ala Asn Tyr  
 325 330 335  
 Asp Ser Lys Gln Asp His Gly Met Gly Ser Ala Asp Ile Lys Tyr Gly  
 340 345 350  
 Asp Ser Thr Val Leu Ile Gln His Met Lys Thr Gly His Trp Leu Ser  
 355 360 365  
 Tyr Leu Val Val Glu Ser Val Val Gly Gly Arg Ala Ala Glu Arg Lys  
 370 375 380  
 Val Val Met Leu Pro Glu Gly His Met Asp Asp Gly Phe Ser Val Val  
 385 390 395 400  
 Arg Ala Arg Ala Glu Glu Ser Arg Ser Ala Gly Ile Ile Arg Lys Ser  
 405 410 415  
 Thr Leu Leu Phe Asn Gln Phe Phe Asp Ala Leu Asp Ser Leu Arg Gly  
 420 425 430  
 Glu Lys Glu Asp Asp Gln Leu Ala Trp Asn Ser Phe Asn Leu Ser Ser  
 435 440 445  
 Val Val Asp Ile Leu Glu Asp Leu Ile Glu Tyr Phe Gly Glu Pro Glu  
 450 455 460  
 Glu Asp Glu Asp His Glu Glu Lys Gln Lys Lys Leu Lys Ala Leu Arg  
 465 470 475 480  
 Asn Arg Gln Asp Leu Phe His Glu Glu Gly Met Val Lys Leu Val Leu  
 485 490 495  
 Glu Thr Ile Asp Lys Leu Ser Ile Phe Lys Ser Gly Arg Asp Phe Ala  
 500 505 510  
 Ala Ile Val Gly Glu Asp Ala Gly Asp Leu Trp Gln Asp Ile Val Thr  
 515 520 525  
 Tyr Leu Tyr Lys Leu Leu Ala Ala Met Ile Arg His Asn His Asn Asn  
 530 535 540  
 Cys Ala Leu Phe Ala Gln Ser Val Arg Leu Asp Trp Leu Ile Asn Arg  
 545 550 555 560  
 Leu Glu Ser Gln Gln Ala Ser Lys Gly Val Leu Glu Val Leu His Cys  
 565 570 575  
 Val Leu Leu Gly Ser Pro Glu Ala Leu Asn Ile Ile Lys Glu Asn His  
 580 585 590  
 Ile Lys Ser Met Ile Ser Gln Leu Glu Lys His Gly Arg Asp Pro Lys  
 595 600 605  
 Val Leu Asp Val Leu Cys Ser Leu Cys Val Gly Asn Gly Val Ala Val  
 610 615 620

Arg Ser Asn Gln Asn Leu Ile Cys Asp Asn Leu Leu Pro Ser Arg Asp  
 625 630 635 640  
 Leu Leu Leu Gln Thr Ala Val Val Asp Glu Val Val Cys Met Arg Pro  
 645 650 655  
 Asn Val Ser Ile Ser Val Asp Lys Asn Ser Thr Val Tyr Lys Lys Trp  
 660 665 670  
 Tyr Phe Glu Val Ala Ile Asp Lys Gln Glu Ala Gly Thr Ser Arg Pro  
 675 680 685  
 Val His Phe Arg Val Gly Trp Ala Thr Thr Gln Gly Phe Arg Thr Tyr  
 690 695 700  
 Leu Arg Gly Gly Glu Gly Trp Gly Asn Ser Gly Val Val Asp Asp Leu  
 705 710 715 720  
 Tyr Ser Phe Gly Phe Asp Gly Leu Asn Leu Trp Thr Gly Gly Val Ser  
 725 730 735  
 Lys Ala Ala Pro Trp Ser Gly Asn Arg Leu Leu Ser Lys Gly Asp Ile  
 740 745 750  
 Val Gly Val Cys Phe Asp Leu Ser Val Pro Arg Ile Leu Tyr His Val  
 755 760 765  
 Asn Gly Ser Pro Ile Lys Ala Ser Phe Glu Gly Ile Asn Leu Glu Gly  
 770 775 780  
 Met Phe Phe Pro Val Leu Ser Phe Ser Ala Arg Val Cys Ala Arg Phe  
 785 790 795 800  
 Ile Leu Gly Gly Lys His Gly Arg Phe Lys Tyr Ser Pro Pro Lys Gly  
 805 810 815  
 Phe Ala Ala Val Cys Glu Ser Val Leu Pro Lys Glu Arg Leu Lys Ile  
 820 825 830  
 Glu Pro Cys Phe Ala Leu Gly His Val Thr Glu Gly Ile Ile Gln Gly  
 835 840 845  
 Pro Thr Ala Ser Gln Asp His Ser Ala Phe Ile Pro Ala Pro Val Asp  
 850 855 860  
 Thr Ala Asn Val Asn Leu Pro Gly Tyr Ile Glu Met Leu Arg Asp Lys  
 865 870 875 880  
 Leu Ala Glu Asn Ile His Glu Leu Trp Cys Met Asn Lys Ile Glu Ala  
 885 890 895  
 Gly Trp Thr Trp Gly Pro Val Arg Asp Asp Ser Lys Lys Val His Asp  
 900 905 910  
 Ser Leu Met Phe Phe Ser Ser Leu Ser Glu Gln Glu Lys Asn Phe Asp  
 915 920 925  
 Ile Thr Met Ala Tyr Glu Thr Leu Arg Thr Leu Met Ala Leu Gly Tyr  
 930 935 940

His Ile Ser Ile Asp Glu Glu Thr Ser Lys Ser Thr Leu Lys Arg Leu  
 945 950 955 960  
 Arg Leu Pro Met Asn Tyr Leu Met Ser Asn Gly Tyr Lys Pro Ala Pro  
 965 970 975  
 Tyr Asn Leu Ser Thr Ile His Leu Asn Val Lys Met Glu Lys Leu Val  
 980 985 990  
 Glu Leu Leu Ala Glu Asn Ala His Asn Val Trp Ala Lys Asp Arg Ile  
 995 1000 1005  
 Ala Gln Gly Trp Thr Tyr Gly Leu Ser Glu Glu Thr Ser Tyr Lys  
 1010 1015 1020  
 Arg Asn Pro Gln Leu Val Pro Tyr Asn Gln Leu Asn Asp Gln Ala  
 1025 1030 1035  
 Lys Lys Leu Asn Arg Asp Thr Ala Ser Glu Thr Ile Arg Thr Ile  
 1040 1045 1050  
 Leu Gly Phe Gly Tyr Ala Leu Glu Pro Pro Thr Asn Glu Gly Gln  
 1055 1060 1065  
 Ser Asp Pro Ser Phe Arg Gly Leu Ala Arg Glu Ile Ser Asp Lys  
 1070 1075 1080  
 Lys Ser His Thr Arg Thr Phe Arg Ala Glu Lys Ser Tyr Ala Val  
 1085 1090 1095  
 Lys Ser Gly Arg Trp Tyr Phe Glu Phe Glu Ala Met Thr Thr Gly  
 1100 1105 1110  
 Tyr Met Arg Val Gly Trp Gly Arg Pro Thr Ile Ala Ala Arg Ser  
 1115 1120 1125  
 Glu Val Gly Thr Asp Gly Cys Ser Phe Ala Phe Asp Gly Phe Leu  
 1130 1135 1140  
 Ala Arg Lys Trp His Gln Gly Ser Glu Thr Phe Gly Lys Thr Trp  
 1145 1150 1155  
 Gly Glu Met Asp Val Ile Gly Cys Met Leu Asn Leu Val Asp Asn  
 1160 1165 1170  
 Thr Ile Ser Phe Thr Met Asn Gly Glu Tyr Leu Cys Asp Ser Val  
 1175 1180 1185  
 Gly Ser Glu Met Ala Phe His Asp Ile Glu Ile Gly Glu Gly Phe  
 1190 1195 1200  
 Val Pro Val Cys Met Leu Ala Ala Gly Glu Lys Ala His Leu His  
 1205 1210 1215  
 Phe Gly Gln Asp Val Asn Asp Leu Lys Tyr Phe Thr Val Cys Gly  
 1220 1225 1230  
 Leu Gln Glu Gly Tyr Glu Pro Phe Cys Val Asn Met Lys Lys Ser  
 1235 1240 1245

Met	Pro	Leu	Trp	Tyr	Ser	Lys	Ser	Gln	Pro	Met	Phe	Gln	Ser	Ile
1250						1255					1260			
Glu	Asp	Glu	His	Asp	Arg	Leu	Gly	Ile	Thr	Arg	Ile	Pro	Ala	Gly
1265						1270					1275			
Ile	Glu	Gly	Pro	Pro	Cys	Leu	Lys	Val	Ser	His	Lys	Lys	Cys	Gly
1280						1285					1290			
Thr	Val	Glu	Asn	Leu	Pro	Thr	Glu	Tyr	Leu	Arg	Leu	Ser	Met	Pro
1295						1300					1305			
Val	Val	Cys	Lys	Asp	Phe	Pro	Thr	Ser	Gly	Glu	Met	Val	Leu	Ser
1310						1315					1320			
Ile	Pro	Val	Pro	Val	Leu	Ser	Pro	Gly	Asn	Lys	Arg	Gly	Gln	Trp
1325						1330					1335			
Ile	Gln	Gln	Gly	Ala	Thr	Ser	Leu	Asp	Leu	Ser	Glu	Thr	Asp	Ser
1340						1345					1350			
Asn	Asp	Gly	Thr	Asn	Arg	Arg	Thr	Arg	Ser	Gly	Leu	Asp	Lys	Met
1355						1360					1365			
Glu	His	Lys	Ala	Ile	Asp	Thr	Asp	Ala	Ile	Asp	Gly	Asp	Ala	Arg
1370						1375					1380			
Val	Asn	Gly	Tyr	Asn	Gly	Asp	Thr	Lys	Glu	Leu	Thr	Lys	Lys	Glu
1385						1390					1395			
Lys	Lys	Lys	Leu	Ala	Ser	Leu	Pro	Leu	Gly	Arg	Lys	Ile	Pro	Met
1400						1405					1410			
Ser	Arg	Ala	Ala	Ser	Ser	Glu	Thr	Ser	Thr	Val	Gln	Ser	Pro	Asp
1415						1420					1425			
Ser	Ser	Phe	Glu	Arg	Ser	Gly	Pro	Ser	Pro	Ala	Lys	Ser	Lys	Arg
1430						1435					1440			
Ser	Lys	Phe	Thr	Lys	Ser	Ser	Ser	Met	Asp	Ser	Gly	Ala	Lys	His
1445						1450					1455			
Pro	Glu	Asp	Thr	Leu	Ala	Lys	Pro	Thr	Gly	Tyr	Glu	Val	Asp	Gly
1460						1465					1470			
Gln	Arg	Ser	Pro	Gly	Ala	Ala	Arg	Arg	Gly	Lys	Lys	His	Asp	Arg
1475						1480					1485			
Leu	Arg	Thr	Pro	Glu	Ala	Ser	Pro	Pro	Gly	Thr	Leu	Thr	Arg	Glu
1490						1495					1500			
Tyr	Ile	Pro	Leu	Lys	Ser	Asp	Asn	Glu	Gly	Ser	Val	Gly	Ser	Asp
1505						1510					1515			
Asn	His	Gly	Arg	Pro	Arg	Leu	Ala	Lys	Leu	Val	Ser	Met	Gly	Ser
1520						1525					1530			
Ser	Phe	Asp	Val	Phe	Ser	Lys	Ser	Ile	Asp	Ile	Met	Ser	Asp	Ile
1535						1540					1545			

Ser	Glu	Ala	Asp	Ser	Ile	Asp	Leu	Ser	Met	Met	Thr	Lys	Phe	Tyr
1550						1555					1560			
Tyr	Ser	Val	Arg	Ile	Phe	Pro	Gly	Gln	Asp	Pro	Thr	Asp	Ile	His
1565						1570					1575			
Val	Gly	Trp	Val	Thr	Pro	Gly	Tyr	His	His	Tyr	Ser	Pro	His	Phe
1580						1585					1590			
Asp	Pro	Ser	Lys	Thr	Ser	Glu	Val	Thr	Val	Asn	Met	Leu	Gly	Glu
1595						1600					1605			
Asn	Gly	Gly	Val	Gln	Glu	Ser	Ser	Lys	Arg	Arg	Asp	Cys	Phe	Thr
1610						1615					1620			
Val	Cys	Val	Gly	Asp	His	Met	Asp	Leu	Leu	Ile	Thr	Pro	Glu	Gly
1625						1630					1635			
Arg	Arg	Ile	Ser	Ser	Gly	Leu	Val	Val	Gly	Cys	Val	Val	Asp	Ala
1640						1645					1650			
Cys	Asn	Gly	Glu	Leu	Tyr	Phe	Thr	Ile	Asn	Gly	Arg	Asp	Ile	Ser
1655						1660					1665			
Thr	Lys	Tyr	Gln	Val	Glu	Pro	Lys	Thr	Lys	Leu	Phe	Pro	Ala	Val
1670						1675					1680			
Phe	Val	Lys	Pro	Thr	Ser	Lys	Glu	Met	Leu	Gln	Phe	Glu	Leu	Gly
1685						1690					1695			
Arg	Ser	Lys	Ile	Leu	Glu	Arg	Arg	Ser	Ser	Ser	Val	Gln	Ser	Glu
1700						1705					1710			
Ile	Ala	Gln	Met	Ser	Val	Asn	Gln	Asn	Cys	Leu	Pro	Leu	Ser	Ala
1715						1720					1725			
Ala	Trp	Phe	Arg	Gly	Asp	Thr	His	Asn	Pro	Thr	Pro	Gln	Cys	Pro
1730						1735					1740			
Ser	Arg	Val	Glu	Val	Gln	Val	Met	Tyr	Thr	Asn	Thr	Trp	Ala	Arg
1745						1750					1755			
Ala	Pro	Leu	Gln	Thr	Met	Asn	Ile	Glu	Thr	Lys	Lys	Met	Ser	Asp
1760						1765					1770			
Asn	Asn	Gly	Trp	Leu	Val	Ser	Cys	Pro	Glu	Pro	Val	Ser	Trp	Leu
1775						1780					1785			
Gly	Val	His	Ile	Pro	Glu	Glu	Asn	Arg	Cys	Met	Asp	Ile	Leu	Glu
1790						1795					1800			
Leu	Val	Glu	His	Glu	Asp	Leu	Leu	Lys	Phe	His	Ala	His	Thr	Leu
1805						1810					1815			
Arg	Leu	Tyr	Cys	Ser	Val	Cys	Ser	His	Gly	Asn	His	His	Val	Ala
1820						1825					1830			
His	Ala	Leu	Ile	Asn	His	Val	Asn	Glu	Asp	Gln	Leu	Met	Tyr	Cys
1835						1840					1845			



Leu	Gln	Cys	Pro	Tyr	Ile	Ser	Gly	Pro	Leu	Arg	Ile	Gly	Tyr	Tyr
1850						1855					1860			
Asn	Leu	Leu	His	Ala	Leu	His	Leu	Gln	Thr	His	Val	Ser	Ala	Arg
1865						1870					1875			
Leu	Lys	Thr	Gln	Asp	Glu	Phe	Ile	Ile	Pro	Leu	Met	Ala	Gly	Pro
1880						1885					1890			
Lys	Pro	Val	Asp	Glu	Glu	Leu	Asp	Ile	Ser	Ser	Ser	Met	Ser	Ile
1895						1900					1905			
Lys	Arg	Ala	Leu	Ser	Thr	Thr	Lys	Ser	Val	Ser	Ile	Arg	Pro	Gln
1910						1915					1920			
Leu	Asn	Ile	Gly	Pro	Ser	Ala	Asp	Ser	Ser	His	Gln	Ser	Phe	Ser
1925						1930					1935			
Gln	Ser	Met	Lys	Ala	Ser	Glu	Gln	Ala	Pro	Pro	Gly	Phe	Asn	His
1940						1945					1950			
Met	Val	Leu	Lys	Gln	His	Val	Ile	Ser	Ser	Leu	Gly	Glu	Ala	Val
1955						1960					1965			
Ala	His	Gly	Val	Ser	His	Cys	Arg	Asp	Pro	Ile	Gly	Gly	Asn	Tyr
1970						1975					1980			
Asn	Asn	Leu	Phe	Val	Pro	Leu	Leu	Glu	Leu	Cys	Asp	Ala	Leu	Leu
1985						1990					1995			
Val	Ile	Gly	Glu	Phe	Asp	Asp	Asp	Asp	Leu	Lys	Ser	Leu	Leu	Ile
2000						2005					2010			
Leu	Ile	Asp	Pro	Ala	Thr	Phe	Asp	Glu	Thr	Tyr	Lys	Lys	Gly	Val
2015						2020					2025			
Ser	Glu	Thr	Val	Gly	Met	Leu	Gln	Met	His	Leu	Asp	Glu	Pro	Val
2030						2035					2040			
Lys	Leu	Ala	Met	Cys	Phe	Leu	Leu	Gln	His	Leu	Cys	Asp	Ser	Gln
2045						2050					2055			
Leu	Arg	His	Arg	Val	Glu	Ser	Ile	Ile	Asn	Phe	Ser	Asp	Asp	Phe
2060						2065					2070			
Val	Glu	Glu	Cys	Gln	Ala	Asp	Gln	Leu	Arg	Arg	Phe	Leu	Glu	Val
2075						2080					2085			
Arg	Asn	Thr	Asp	Met	Pro	Pro	Val	Ile	Ala	Ala	Lys	Lys	Thr	Arg
2090						2095					2100			
Glu	Phe	Arg	Ser	Thr	Pro	Gln	Glu	Gln	Met	Arg	Met	Leu	Leu	His
2105						2110					2115			
Phe	Lys	Asp	Gly	Asp	Asp	Gly	Met	Cys	Pro	Cys	Arg	Glu	Asp	Leu
2120						2125					2130			
Arg	Ser	Val	Leu	Leu	Glu	Phe	His	Ser	Thr	Leu	Ala	Lys	His	Cys
2135						2140					2145			

Gly Val	His Glu Thr Gln Glu	Glu Lys Ser Thr Asp	Ser Arg Gly
2150	2155	2160	
Val Ile	Arg Arg Phe Leu Ser	Trp Leu Ser Gly Ser	Arg Lys Asp
2165	2170	2175	
Ala Ser	Pro Ala Gly Ala Ile	Leu Gln Glu Lys Phe	Ser Ser Asp
2180	2185	2190	
Ser Leu	Ser His Leu Ile Ser	Asn Thr Met Ile Lys	Trp Ala Glu
2195	2200	2205	
Glu Lys	His Ile Glu Asp Pro	Thr Leu Val Arg Glu	Met Phe Asn
2210	2215	2220	
Leu Leu	His Arg Gln Tyr Asp	Gly Val Gly Glu Leu	Cys Ser Ala
2225	2230	2235	
Leu Gln	Lys Ser Tyr Val Val	Ser Ser Asn Gln Arg	Asp Asp Ile
2240	2245	2250	
Val His	Leu Leu Thr Ser Leu	Gly Gln Ile Arg Ser	Leu Leu Thr
2255	2260	2265	
Val Gln	Met Gly Ser Val Glu	Glu Glu Ala Leu Ile	Lys His Leu
2270	2275	2280	
Trp Glu	Val Thr Asp Asn Lys	Val Phe Tyr Gln His	Pro Asp Leu
2285	2290	2295	
Met Arg	Ala Leu Cys Val His	Glu Thr Val Met Asn	Val Met Val
2300	2305	2310	
Asn Val	Leu Glu Lys His Gln	Thr Ser Ile Gln Leu	Thr Ser Asp
2315	2320	2325	
Glu Glu	Ala Glu Ser Ser Ala	Gln Gly Gln Gly Val	Thr Gly Ala
2330	2335	2340	
Ser Thr	Ala Ala Ala Pro Pro	Lys Thr Gln Val Cys	Val Tyr Arg
2345	2350	2355	
Phe Leu	Ala Arg Arg Ala Arg	Met Cys His Ser Lys	Asp Arg Phe
2360	2365	2370	
Ala Arg	Ala Leu Ile Ala Gly	Cys Cys Arg Phe Leu	Cys Tyr Phe
2375	2380	2385	
Cys Arg	Thr Ser Arg Gln Asn	Gln Arg Ala Leu Phe	Asp Thr Leu
2390	2395	2400	
Leu Tyr	Leu Leu Asp His Gly	Phe Ile Gly Leu Ser	Tyr Pro Ser
2405	2410	2415	
Leu Arg	Gly Ser Cys Pro Leu	Asp Val Ala Ala Ala	Ser Leu Met
2420	2425	2430	
Asp Asn	Asn Glu Leu Ala Leu	Ala Leu Arg Glu Gln	His Leu Glu
2435	2440	2445	

Lys Val	Ile Thr Phe Leu	Ser	Arg Cys Gly Val	Gln	Asp Asn Ala
2450		2455		2460	
Arg Leu	Arg Ala Met Gly	Asn	Pro Tyr Leu Asp	Gly	Thr Pro Leu
2465		2470		2475	
Asp Gly	Glu Arg Tyr Leu	Asp	Phe Met Arg His	Ala	Val Trp Val
2480		2485		2490	
Asn Gly	Glu Thr Val Glu	Glu	Asn Ala Asn Leu	Ile	Val Arg Met
2495		2500		2505	
Leu Ile	Arg His Pro Glu	Cys	Leu Gly Pro Ala	Leu	Arg Gly Glu
2510		2515		2520	
Gly Lys	Gly Leu Leu Ala	Ala	Met Glu Glu Ala	Ile	Asp Leu Ser
2525		2530		2535	
Glu Thr	Ala Glu Glu Gly	Tyr	Leu Ile Ser Ala	Pro	Thr Met Ala
2540		2545		2550	
Ile Ser	Glu Glu Asp Gly	Glu	Val Arg Pro Ile	Asp	Ala Ser Gly
2555		2560		2565	
Gln Asp	Glu Glu Gly Asp	Glu	Asp Glu Asp Asp	Val	Asp Thr Gly
2570		2575		2580	
Gly Ala	Ile Leu Thr Phe	Tyr	Ala Thr Leu Ile	Asp	Leu Leu Gly
2585		2590		2595	
Arg Cys	Ala Pro Asp Glu	Asn	Arg Leu Ser Gln	Gly	Arg Thr Glu
2600		2605		2610	
Pro Gln	Arg Ile Arg Ala	Ile	Leu Gln Ser Leu	Val	Pro Leu Asp
2615		2620		2625	
Asp Leu	Val Gly Val Leu	Asn	Leu Lys Phe Ile	Leu	Pro Ser Pro
2630		2635		2640	
Gln Lys	Ile Tyr Glu Lys	Lys	Asp Asp Gly Ala	Gly	Lys Pro Leu
2645		2650		2655	
Gly Ala	Asp Leu Lys Gly	Leu	Thr Pro Val His	Lys	Glu Ala Met
2660		2665		2670	
Leu Leu	Phe Leu Glu Arg	Val	Tyr Gly Val Gly	Asn	Gln Glu Leu
2675		2680		2685	
Phe Phe	Glu Leu Leu Glu	Val	Gly Phe Leu Pro	Asp	Leu Arg Ala
2690		2695		2700	
Ala Thr	Thr Met Asp Thr	Pro	Thr Thr His Asp	His	Asp Met Ala
2705		2710		2715	
Leu Ala	Leu Asn Arg Tyr	Ile	Cys Asn Ser Val	Leu	Pro Leu Leu
2720		2725		2730	
Thr Arg	His Ser Glu Met	Phe	Glu Ser Ala Asp	Gln	Phe Ala Ser
2735		2740		2745	

Leu	Leu	Asp	Ser	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ala	Ser	Cys
2750						2755					2760			
Arg	Ser	Leu	Thr	Arg	Gly	Gln	Arg	Asp	Thr	Val	Ala	Asp	Phe	Leu
2765						2770					2775			
Val	Ala	Leu	Thr	Arg	Ser	Leu	Lys	Pro	Ser	Met	Met	Gln	Arg	Leu
2780						2785					2790			
Leu	Arg	Lys	Leu	Ile	Asn	Asp	Val	Pro	Val	Leu	Ala	Glu	Tyr	Ser
2795						2800					2805			
Tyr	Val	Ala	Leu	Lys	Ile	Leu	Gln	Leu	His	Tyr	Glu	Arg	Cys	Val
2810						2815					2820			
Ser	Tyr	Tyr	Gly	Ser	Asn	Gly	Gly	Trp	Gly	Ser	Tyr	Gly	Ala	Ala
2825						2830					2835			
Asn	Asp	Glu	Glu	Lys	Arg	Leu	Thr	Met	Met	Leu	Phe	Thr	Gly	Leu
2840						2845					2850			
Phe	Asp	Ala	Leu	Ala	Glu	Lys	Glu	Tyr	Asp	Glu	Glu	Leu	Phe	Asp
2855						2860					2865			
Arg	Ala	Leu	Pro	Cys	Leu	Thr	Ala	Ile	Gly	Ser	Ala	Leu	Pro	Pro
2870						2875					2880			
Asp	Tyr	Ser	Met	Ser	Tyr	Asn	Asp	Glu	Ser	Tyr	Val	Arg	Glu	Ser
2885						2890					2895			
Cys	Phe	Asp	Ala	Asp	Gly	Ile	Tyr	Gln	Pro	Lys	Pro	Val	Asp	Ser
2900						2905					2910			
Asn	Lys	Val	Leu	Leu	Asn	Glu	Ser	Leu	Leu	Ser	Phe	Ser	Asp	Arg
2915						2920					2925			
Phe	Ala	Glu	His	Leu	His	Asp	Ser	Trp	Ala	Leu	Ala	Met	Phe	Asp
2930						2935					2940			
Asn	Gly	Trp	Thr	His	Gly	Glu	Ala	Glu	Asn	Ser	Ala	Met	Lys	Glu
2945						2950					2955			
Ser	Cys	Met	Leu	Arg	Pro	Tyr	Lys	Thr	Leu	Thr	Thr	Lys	Glu	Lys
2960						2965					2970			
Asp	Ser	Tyr	Arg	Glu	Pro	Val	Arg	Glu	Cys	Ile	Lys	Ala	Leu	Leu
2975						2980					2985			
Ala	Trp	Gly	Trp	Ser	Val	Glu	Arg	Ser	Lys	Ala	Ser	Glu	Gln	Gln
2990						2995					3000			
Ser	Gln	Ala	His	Arg	Pro	Arg	Arg	Leu	Ser	Lys	Ala	Ser	Leu	Gly
3005						3010					3015			
Ala	Met	Glu	Ser	Pro	His	Gly	Tyr	Asn	Pro	Arg	Pro	Ile	Asp	Val
3020						3025					3030			
Ser	Asn	Ile	Thr	Leu	Thr	Arg	Glu	Met	Gln	Thr	Met	Ala	Glu	Arg
3035						3040					3045			

Leu	Ala	Glu	Asn	Ala	His	Asp	Val	Trp	Ala	Lys	Lys	Thr	Lys	Leu
3050						3055					3060			
Glu	Met	Glu	Leu	Arg	Gly	Ser	Gly	Cys	His	Ala	Gln	Leu	Val	Pro
3065						3070					3075			
Phe	Asp	Ile	Leu	Thr	Asp	Ser	Glu	Lys	Lys	Lys	Asp	Arg	Asp	Met
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Ala	Gln	Ala	Leu	Leu	Lys	Phe	Leu	Gln	Val	Asn	Gly	Tyr	Arg	Leu
3095						3100					3105			
Gln	Arg	His	Ser	Leu	Ser	Met	Asp	Ala	Asp	Gly	Ile	Ile	Arg	Gly
3110						3115					3120			
His	Ser	Thr	Ile	Glu	Lys	Arg	Phe	Ala	Phe	Asn	Leu	Leu	Asp	Lys
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Leu	Leu	His	Tyr	Val	Asp	Lys	Ser	Gln	Ala	Asn	Leu	Lys	Pro	Gln
3140						3145					3150			
Arg	Arg	Gln	Gln	Asp	Ser	Phe	Arg	Ser	Ser	Lys	Lys	Glu	Ser	Ser
3155						3160					3165			
Gly	Asp	Arg	Gly	Tyr	Lys	Phe	Phe	Ala	Lys	Val	Val	Leu	Pro	Leu
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Ile	Glu	Lys	Tyr	Phe	Gln	Ala	His	Ser	Ser	Tyr	Phe	Val	Ala	Asp
3185						3190					3195			
Pro	Asn	Ala	Pro	Gln	Asn	Gly	Arg	Ser	Gly	Gly	Ala	Ser	Thr	Arg
3200						3205					3210			
Glu	Lys	Glu	Leu	Val	Ser	Ser	Leu	Phe	Cys	Lys	Leu	Ala	Gln	Leu
3215						3220					3225			
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3230						3235					3240			
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3245						3250					3255			
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Phe	Phe	Arg	His	Ala	Ser	Asp	Asp	Leu	Val	Ala	Thr	Val	Asp	Ser
3275						3280					3285			
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Pro	Asp	Asn	Ile	Cys	Arg	Arg	Gln	Gly	Asn	Tyr	Trp	Thr	Met	Val
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Asn	Ser	Gly	Asn	Leu	Asn	Asn	Thr	Leu	Gly	Asn	Val	Leu	Thr	Leu
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Val	Lys	Asn	Asn	Leu	Gly	Ser	Glu	Asn	Ala	Pro	Trp	Met	Ser	Arg
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Arg	Thr	Ser	Lys	Val	Phe	Lys	Ala	Glu	Glu	Asp	Leu	Lys	Lys	Glu
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Leu Thr	Ser Ala Met Ser	Lys	Ser Gly Gly Gly	Asn	Gly Asn Phe
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Ser Tyr	Gly Gly Ser Leu	Pro	Gly Glu Pro Pro	Lys	Leu Gln Ser
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Thr Ala	Pro Lys Arg Pro	Asp	Gly Gln His Gly	Ser	Pro Pro Ser
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Leu Ile	Leu Ala Ala Leu	Lys	Arg Leu Leu Pro	Ile	Gly Met Asn
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Gln Tyr	Gly Ala Arg Glu	Gln	Glu Leu Val Gln	Gln	Ala Lys Leu
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Met Phe	Gly Gln Lys Glu	Thr	Asp Lys Glu Val	Arg	Asp Tyr Leu
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Leu Gln	Gln Leu His Leu	His	Glu Lys Glu Lys	Val	Glu Glu Thr
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Ala Arg	Leu Thr Ala Leu	Gly	His Ala Gln Ser	Ser	Ile Ser Pro
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Lys Pro	Ser Val Ser Phe	Ser	Ser Ser Pro Pro	Ser	Ser Ser Ser
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Pro Ala	Ser Ala Pro Ala	Leu	Ala Thr Ser Ser	Ser	Ser Ala Thr
3785		3790		3795	
Ser Thr	Thr Ser Thr Ser	Ser	Ser Ser Ser Ser	Ser	Ser Ser Ser
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Ser Ser	Pro Ser Ser Pro	Pro	Ser Ser Ser Val	Asp	Pro Gln Asp
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Ser Thr	Lys Pro Ser Arg	Ile	Arg Thr Arg Arg	Gln	Ser Ile Ala
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Ala Trp	Gln Thr Ala Ala	Ser	Arg Val Thr Gly	Ala	His Ile Thr
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Gln Ser	Asp Ser Lys Gly	Trp	Gln Arg His Leu	Tyr	Asn Asn Met
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Ala Ala	Ser Lys Leu Val	Gln	Val Val Glu Leu	Thr	Lys Asp Lys
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Val Ile	Glu Arg Ile Met	Asn	Met Ala Gln Val	Leu	Asn Arg Leu
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His Gln	Met Glu His Pro	Ser	Met Ser Lys Lys	Asn	Ala Trp Arg
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Arg Met	Ile Pro Leu His	His	Leu Pro Arg His	Arg	Ala Ile Asn
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Ser	Gly	Lys	Asp	Val	Val	Asp	Ala	Gln	Gly	Arg	Glu	Asn	Phe	Ser
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Ile Thr	Gly Ser Ile Lys His	Ser Leu His Val Pro	Arg Val Ala
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Arg Arg	Gln Thr Ser Ser Ile	Ile Asn Val Pro Gly	Tyr Gly Met
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Pro Ser	Ala Arg Arg Asn Thr	Ser Phe Trp Gln Tyr	Leu Thr Ser
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Gln Tyr	Phe Thr Asn Val Asn	Ser Met Asp Thr Val	Ser Ala Phe
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Pro Asp	Met Ser Ala Gly Arg	Arg Asp Ser Thr Val	Phe Pro Ser
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Glu Glu	Glu Glu Glu Pro Val	Tyr Glu Pro Gln Met	Asn Arg Val
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Lys Gln	Thr Val Val Ser Leu	Phe Ala Arg Asn Phe	Tyr Asn Ile
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Lys	Tyr	Val	Ala	Leu	Ala	Leu	Val	Phe	Cys	Ile	Asn	Ile	Leu	Leu
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 <213> Mus musculus

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 Asp Asp Glu Val Val Leu Gln Cys Thr Ala Thr Ile His Lys Glu Gln  
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 Gln Lys Leu Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg Leu Cys Phe  
 35 40 45  
 Leu Glu Ser Thr Ser Asn Ser Lys Asn Val Pro Pro Asp Leu Ser Ile  
 50 55 60  
 Cys Thr Phe Val Leu Glu Gln Ser Leu Ser Val Arg Ala Leu Gln Glu  
 65 70 75 80  
 Met Leu Ala Asn Thr Val Glu Lys Ser Glu Gly Gln Val Asp Val Glu

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Lys	Trp	Lys	Phe	Met	Met	Lys	Thr	Ala	Gln	Gly	Gly	Gly	His	Arg	Thr	
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Leu	Leu	Tyr	Gly	His	Ala	Ile	Leu	Leu	Arg	His	Ser	Tyr	Ser	Gly	Met	
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Tyr	Leu	Cys	Cys	Leu	Ser	Thr	Ser	Arg	Ser	Ser	Thr	Asp	Lys	Leu	Ala	
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			340					345					350			
Glu	Ile	Lys	Tyr	Gly	Asp	Ser	Ile	Cys	Tyr	Ile	Gln	His	Val	Asp	Thr	
		355					360					365				
Gly	Leu	Trp	Leu	Thr	Tyr	Gln	Ala	Val	Asp	Val	Lys	Ser	Ala	Arg	Met	
						375					380					
Gly	Ser	Ile	Gln	Arg	Lys	Ala	Ile	Met	His	His	Glu	Gly	His	Met	Asp	
385					390					395					400	
Asp	Gly	Leu	Asn	Leu	Ser	Arg	Ser	Gln	His	Glu	Glu	Ser	Arg	Thr	Ala	

405					410					415					
Arg	Val	Ile	Arg	Ser	Thr	Val	Phe	Leu	Phe	Asn	Arg	Phe	Ile	Arg	Gly
			420					425					430		
Leu	Asp	Ala	Leu	Ser	Lys	Lys	Val	Lys	Leu	Pro	Thr	Ile	Asp	Leu	Pro
		435					440					445			
Ile	Glu	Ser	Val	Ser	Leu	Ser	Leu	Gln	Asp	Leu	Ile	Gly	Tyr	Phe	His
	450					455					460				
Pro	Pro	Asp	Glu	His	Leu	Glu	His	Glu	Asp	Lys	Gln	Asn	Arg	Leu	Arg
465						470					475				480
Ala	Leu	Lys	Asn	Arg	Gln	Asn	Leu	Phe	Gln	Glu	Glu	Gly	Met	Ile	Asn
				485					490					495	
Leu	Val	Leu	Glu	Cys	Ile	Asp	Arg	Leu	His	Val	Tyr	Ser	Ser	Ala	Ala
			500					505					510		
His	Phe	Ala	Asp	Val	Ala	Gly	Arg	Glu	Ala	Gly	Glu	Ser	Trp	Lys	Ser
		515					520					525			
Ile	Leu	Asn	Ser	Leu	Tyr	Glu	Leu	Leu	Ala	Ala	Leu	Ile	Arg	Gly	Asn
	530					535					540				
Arg	Lys	Asn	Cys	Ala	Gln	Phe	Ser	Gly	Ser	Leu	Asp	Trp	Leu	Ile	Ser
545						550					555				560
Arg	Leu	Glu	Arg	Leu	Glu	Ala	Ser	Ser	Gly	Ile	Leu	Glu	Val	Leu	His
				565					570					575	
Cys	Val	Leu	Val	Glu	Ser	Pro	Glu	Ala	Leu	Asn	Ile	Ile	Lys	Glu	Gly
			580					585					590		
His	Ile	Lys	Ser	Ile	Ile	Ser	Leu	Leu	Asp	Lys	His	Gly	Arg	Asn	His
		595					600					605			
Lys	Val	Leu	Asp	Val	Leu	Cys	Ser	Leu	Cys	Val	Cys	His	Gly	Val	Ala
	610					615					620				
Val	Arg	Ser	Asn	Gln	His	Leu	Ile	Cys	Asp	Asn	Leu	Leu	Pro	Gly	Arg
625						630					635				640
Asp	Leu	Leu	Leu	Gln	Thr	Arg	Leu	Val	Asn	His	Val	Ser	Ser	Met	Arg
				645					650					655	
Pro	Asn	Ile	Phe	Leu	Gly	Val	Ser	Glu	Gly	Ser	Ala	Gln	Tyr	Lys	Lys
			660					665					670		
Trp	Tyr	Tyr	Glu	Leu	Met	Val	Asp	His	Thr	Glu	Pro	Phe	Val	Thr	Ala
		675					680					685			
Glu	Ala	Thr	His	Leu	Arg	Val	Gly	Trp	Ala	Ser	Thr	Glu	Gly	Tyr	Ser
	690					695					700				
Pro	Tyr	Pro	Gly	Gly	Gly	Glu	Glu	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp
705						710					715				720
Asp	Leu	Phe	Ser	Tyr	Gly	Phe	Asp	Gly	Leu	His	Leu	Trp	Ser	Gly	Cys

725					730					735						
Ile	Ala	Arg	Thr	Val	Ser	Ser	Pro	Asn	Gln	His	Leu	Leu	Arg	Thr	Asp	
740					745					750						
Asp	Val	Ile	Ser	Cys	Cys	Leu	Asp	Leu	Ser	Ala	Pro	Ser	Ile	Ser	Phe	
755					760					765						
Arg	Ile	Asn	Gly	Gln	Pro	Val	Gln	Gly	Met	Phe	Glu	Asn	Phe	Asn	Ile	
770					775					780						
Asp	Gly	Leu	Phe	Phe	Pro	Val	Val	Ser	Phe	Ser	Ala	Gly	Ile	Lys	Val	
785					790					795					800	
Arg	Phe	Leu	Leu	Gly	Gly	Arg	His	Gly	Glu	Phe	Lys	Phe	Leu	Pro	Pro	
805					810					815						
Pro	Gly	Tyr	Ala	Ala	Cys	Tyr	Glu	Ala	Val	Leu	Pro	Lys	Glu	Lys	Leu	
820					825					830						
Lys	Val	Glu	His	Ser	Arg	Glu	Tyr	Lys	Gln	Glu	Arg	Thr	Tyr	Thr	Arg	
835					840					845						
Asp	Leu	Leu	Gly	Pro	Thr	Val	Ser	Leu	Thr	Gln	Ala	Ala	Phe	Thr	Pro	
850					855					860						
Val	Pro	Val	Asp	Thr	Ser	Gln	Ile	Val	Leu	Pro	Pro	His	Leu	Glu	Arg	
865					870					875					880	
Ile	Arg	Glu	Arg	Leu	Ala	Glu	Asn	Ile	His	Glu	Leu	Trp	Val	Met	Asn	
885					890					895						
Lys	Ile	Glu	Leu	Gly	Trp	Gln	Tyr	Gly	Pro	Val	Arg	Asp	Asp	Asn	Lys	
900					905					910						
Arg	Gln	His	Pro	Cys	Leu	Val	Glu	Phe	Cys	Lys	Leu	Pro	Glu	Gln	Glu	
915					920					925						
Arg	Asn	Tyr	Asn	Leu	Gln	Met	Ser	Leu	Glu	Thr	Leu	Lys	Thr	Leu	Leu	
930					935					940						
Ala	Leu	Gly	Cys	His	Val	Gly	Ile	Ala	Asp	Glu	His	Ala	Glu	Glu	Lys	
945					950					955					960	
Val	Lys	Lys	Met	Lys	Leu	Pro	Lys	Asn	Tyr	Gln	Leu	Thr	Ser	Gly	Tyr	
965					970					975						
Lys	Pro	Ala	Pro	Met	Asp	Leu	Ser	Phe	Ile	Lys	Leu	Thr	Pro	Ser	Gln	
980					985					990						
Glu	Ala	Met	Val	Asp	Lys	Leu	Ala	Glu	Asn	Ala	His	Asn	Val	Trp	Ala	
995					1000					1005						
Arg	Asp	Arg	Ile	Arg	Gln	Gly	Trp	Thr	Tyr	Gly	Ile	Gln	Gln	Asp		
1010					1015					1020						
Val	Lys	Asn	Arg	Arg	Asn	Pro	Arg	Leu	Val	Pro	Tyr	Thr	Leu	Leu		
1025					1030					1035						
Asp	Asp	Arg	Thr	Lys	Lys	Ser	Asn	Lys	Asp	Ser	Leu	Arg	Glu	Ala		

1040	1045	1050
Val Arg Thr Leu Leu Gly Tyr	Gly Tyr His Leu Glu	Ala Pro Asp
1055	1060	1065
Gln Asp His Ala Ser Arg Ala	Glu Val Cys Ser Gly	Thr Gly Glu
1070	1075	1080
Arg Phe Arg Ile Phe Arg Ala	Glu Lys Thr Tyr Ala	Val Lys Ala
1085	1090	1095
Gly Arg Trp Tyr Phe Glu Phe	Glu Ala Val Thr Ala	Gly Asp Met
1100	1105	1110
Arg Val Gly Trp Ser Arg Pro	Gly Cys Gln Pro Asp	Leu Glu Leu
1115	1120	1125
Gly Ser Asp Asp Arg Ala Phe	Ala Phe Asp Gly Phe	Lys Ala Gln
1130	1135	1140
Arg Trp His Gln Gly Asn Glu	His Tyr Gly Arg Ser	Trp Gln Ala
1145	1150	1155
Gly Asp Val Val Gly Cys Met	Val Asp Met Asn Glu	His Thr Met
1160	1165	1170
Met Phe Thr Leu Asn Gly Glu	Ile Leu Leu Asp Asp	Ser Gly Ser
1175	1180	1185
Glu Leu Ala Phe Lys Asp Phe	Asp Val Gly Asp Gly	Phe Ile Pro
1190	1195	1200
Val Cys Ser Leu Gly Val Ala	Gln Val Gly Arg Met	Asn Phe Gly
1205	1210	1215
Lys Asp Val Ser Thr Leu Lys	Tyr Phe Thr Ile Cys	Gly Leu Gln
1220	1225	1230
Glu Gly Tyr Glu Pro Phe Ala	Val Asn Thr Asn Arg	Asp Ile Thr
1235	1240	1245
Met Trp Leu Ser Lys Arg Leu	Pro Gln Phe Leu Gln	Val Pro Ser
1250	1255	1260
Asn His Glu His Ile Glu Val	Thr Arg Ile Asp Gly	Thr Ile Asp
1265	1270	1275
Ser Ser Pro Cys Leu Lys Val	Thr Gln Lys Ser Phe	Gly Ser Gln
1280	1285	1290
Asn Asn Asn Thr Asp Ile Met	Phe Tyr Arg Leu Ser	Met Pro Ile
1295	1300	1305
Glu Cys Ala Glu Val Phe Ser	Lys Ser Val Ala Gly	Gly Leu Pro
1310	1315	1320
Gly Ala Gly Phe Tyr Gly Pro	Lys Ser Asp Leu Glu	Asp Phe Asp
1325	1330	1335
Val Asp Ser Asp Phe Glu Val	Leu Met Lys Thr Ala	His Gly His



1340	1345	1350
Leu Val Pro Asp Arg Ile Asp Lys Asp Lys Glu Thr Pro Lys Pro		
1355	1360	1365
Glu Phe Asn Asn His Lys Asp Tyr Ala Gln Glu Lys Pro Ser Arg		
1370	1375	1380
Leu Lys Gln Arg Phe Leu Leu Arg Arg Thr Lys Pro Asp Tyr Ser		
1385	1390	1395
Thr Gly His Ser Ala Arg Leu Thr Glu Asp Val Leu Ala Gly Asp		
1400	1405	1410
Arg Asp Asp Tyr Glu Tyr Leu Met Gln Thr Ser Thr Tyr Tyr Tyr		
1415	1420	1425
Ser Val Arg Ile Phe Pro Gly Gln Glu Pro Ala Asn Val Trp Val		
1430	1435	1440
Gly Trp Ile Thr Ser Asp Phe His Gln Tyr Asp Thr Gly Phe Asp		
1445	1450	1455
Leu Asp Arg Val Arg Thr Val Thr Val Thr Leu Gly Asp Glu Lys		
1460	1465	1470
Gly Lys Val His Glu Ser Ile Lys Arg Ser Asn Cys Tyr Met Val		
1475	1480	1485
Cys Ala Gly Glu Ser Met Ser Pro Gly Gln Gly Arg Asn Asn Ser		
1490	1495	1500
Asn Gly Leu Glu Ile Gly Cys Val Val Asp Ala Ala Ser Gly Leu		
1505	1510	1515
Leu Thr Phe Ile Ala Asn Gly Lys Glu Leu Ser Thr Tyr Tyr Gln		
1520	1525	1530
Val Glu Pro Ser Thr Lys Leu Phe Pro Ala Val Phe Ala Gln Ala		
1535	1540	1545
Thr Ser Pro Asn Val Phe Gln Phe Glu Leu Gly Arg Ile Lys Asn		
1550	1555	1560
Val Met Pro Leu Ser Ala Gly Leu Phe Lys Ser Glu His Lys Asn		
1565	1570	1575
Pro Val Pro Gln Cys Pro Pro Arg Leu His Val Gln Phe Leu Ser		
1580	1585	1590
His Val Leu Trp Ser Arg Met Pro Asn Gln Phe Leu Lys Val Asp		
1595	1600	1605
Val Ser Arg Ile Ser Glu Arg Gln Gly Trp Leu Val Gln Cys Leu		
1610	1615	1620
Asp Pro Leu Gln Phe Met Ser Leu His Ile Pro Glu Glu Asn Arg		
1625	1630	1635
Ser Val Asp Ile Leu Glu Leu Thr Glu Gln Glu Glu Leu Leu Gln		

1640		1645		1650
Phe His Tyr His Thr Leu Arg	Leu Tyr Ser Ala Val	Cys Ala Leu		
1655	1660	1665		
Gly Asn His Arg Val Ala His	Ala Leu Cys Ser His	Val Asp Glu		
1670	1675	1680		
Pro Gln Leu Leu Tyr Ala Ile	Glu Asn Lys Tyr Met	Pro Gly Leu		
1685	1690	1695		
Leu Arg Ala Gly Tyr Tyr Asp	Leu Leu Ile Asp Ile	His Leu Ser		
1700	1705	1710		
Ser Tyr Ala Thr Ala Arg Leu	Met Met Asn Asn Glu	Phe Ile Val		
1715	1720	1725		
Pro Met Thr Glu Glu Thr Lys	Ser Ile Thr Leu Phe	Pro Asp Glu		
1730	1735	1740		
Asn Lys Lys His Gly Leu Pro	Gly Ile Gly Leu Ser	Thr Ser Leu		
1745	1750	1755		
Arg Pro Arg Met Arg Phe Ser	Ser Pro Ser Phe Val	Ser Ile Ser		
1760	1765	1770		
Asn Asp Cys Tyr Gln Tyr Ser	Pro Glu Phe Pro Leu	Asp Ile Leu		
1775	1780	1785		
Lys Ala Lys Thr Ile Gln Met	Leu Thr Glu Ala Val	Lys Glu Gly		
1790	1795	1800		
Ser Leu His Ala Arg Asp Pro	Val Gly Gly Thr Thr	Glu Phe Leu		
1805	1810	1815		
Phe Val Pro Leu Ile Lys Leu	Phe Tyr Thr Leu Leu	Ile Met Gly		
1820	1825	1830		
Ile Phe His Asn Glu Asp Leu	Lys His Ile Leu Gln	Leu Ile Glu		
1835	1840	1845		
Pro Ser Val Phe Lys Glu Ala	Ala Val Pro Glu Glu	Glu Gly Gly		
1850	1855	1860		
Thr Pro Glu Lys Glu Ile Ser	Ile Glu Asp Ala Lys	Leu Glu Gly		
1865	1870	1875		
Glu Glu Glu Ala Lys Gly Gly	Lys Arg Pro Lys Glu	Gly Leu Leu		
1880	1885	1890		
Gln Met Lys Leu Pro Glu Pro	Val Lys Leu Gln Met	Cys Leu Leu		
1895	1900	1905		
Leu Gln Tyr Leu Cys Asp Cys	Gln Val Arg His Arg	Ile Glu Ala		
1910	1915	1920		
Ile Val Ala Phe Ser Asp Asp	Phe Val Ala Lys Leu	Gln Asp Asn		
1925	1930	1935		
Gln Arg Phe Arg Tyr Asn Glu	Val Met Gln Ala Leu	Asn Met Ser		

1940						1945						1950					
Ala	Ala	Leu	Thr	Ala	Arg	Lys	Thr	Lys	Glu	Phe	Arg	Ser	Pro	Pro			
1955						1960					1965						
Gln	Glu	Gln	Ile	Asn	Met	Leu	Leu	Asn	Phe	Lys	Asp	Asp	Lys	Ser			
1970						1975					1980						
Glu	Cys	Pro	Cys	Pro	Glu	Glu	Ile	Arg	Asp	Gln	Leu	Leu	Asp	Phe			
1985						1990					1995						
His	Glu	Asp	Leu	Met	Thr	His	Cys	Gly	Ile	Glu	Leu	Asp	Glu	Asp			
2000						2005					2010						
Gly	Ser	Leu	Asp	Gly	Ser	Asn	Asp	Leu	Thr	Ile	Arg	Gly	Arg	Leu			
2015						2020					2025						
Leu	Ser	Leu	Val	Glu	Lys	Val	Thr	Tyr	Leu	Lys	Lys	Lys	Gln	Ala			
2030						2035					2040						
Glu	Lys	Pro	Val	Ala	Ser	Asp	Ser	Arg	Lys	Cys	Ser	Ser	Leu	Gln			
2045						2050					2055						
Gln	Leu	Ile	Ser	Glu	Thr	Met	Val	Arg	Trp	Ala	Gln	Glu	Ser	Val			
2060						2065					2070						
Ile	Glu	Asp	Pro	Glu	Leu	Val	Arg	Ala	Met	Phe	Val	Leu	Leu	His			
2075						2080					2085						
Arg	Gln	Tyr	Asp	Gly	Ile	Gly	Gly	Leu	Val	Arg	Ala	Leu	Pro	Lys			
2090						2095					2100						
Thr	Tyr	Thr	Ile	Asn	Gly	Val	Ser	Val	Glu	Asp	Thr	Ile	Asn	Leu			
2105						2110					2115						
Leu	Ala	Ser	Leu	Gly	Gln	Ile	Arg	Ser	Leu	Leu	Ser	Val	Arg	Met			
2120						2125					2130						
Gly	Lys	Glu	Glu	Glu	Lys	Leu	Met	Ile	Arg	Gly	Leu	Gly	Asp	Ile			
2135						2140					2145						
Met	Asn	Asn	Lys	Val	Phe	Tyr	Gln	His	Pro	Asn	Leu	Met	Arg	Ala			
2150						2155					2160						
Leu	Gly	Met	His	Glu	Thr	Val	Met	Glu	Val	Met	Val	Asn	Val	Leu			
2165						2170					2175						
Gly	Gly	Gly	Glu	Ser	Lys	Glu	Ile	Thr	Phe	Pro	Lys	Met	Val	Ala			
2180						2185					2190						
Asn	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Ile	Ser	Arg	Gln			
2195						2200					2205						
Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Leu	Ser	Tyr	Leu	Leu	Glu	Asn			
2210						2215					2220						
Ser	Ser	Val	Gly	Leu	Ala	Ser	Pro	Ala	Met	Arg	Gly	Ser	Thr	Pro			
2225						2230					2235						
Leu	Asp	Val	Ala	Ala	Ala	Ser	Val	Met	Asp	Asn	Asn	Glu	Leu	Ala			

2240		2245		2250
Leu Ala 2255	Leu Arg Glu Pro	Asp 2260	Leu Glu Lys Val	Val Ala Arg Tyr 2265
Leu Ala 2270	Gly Cys Gly Leu	Gln 2275	Ser Cys Gln Met	Leu Val Ser Lys 2280
Gly Tyr 2285	Pro Asp Ile Gly	Trp 2290	Asn Pro Val Glu	Gly Glu Arg Tyr 2295
Leu Asp 2300	Phe Leu Arg Phe	Ala 2305	Val Phe Cys Asn	Gly Glu Ser Val 2310
Glu Glu 2315	Asn Ala Asn Val	Val 2320	Val Arg Leu Leu	Ile Arg Arg Pro 2325
Glu Cys 2330	Phe Gly Pro Ala	Leu 2335	Arg Gly Glu Gly	Gly Asn Gly Leu 2340
Leu Ala 2345	Ala Met Glu Glu	Ala 2350	Ile Lys Ile Ala	Glu Asp Pro Ser 2355
Arg Asp 2360	Gly Pro Ser Pro	Thr 2365	Ser Gly Ser Ser	Lys Thr Leu Asp 2370
Ile Glu 2375	Glu Glu Glu Asp	Asp 2380	Thr Ile His Met	Gly Asn Ala Ile 2385
Met Thr 2390	Phe Tyr Ala Ala	Leu 2395	Ile Asp Leu Leu	Gly Arg Cys Ala 2400
Pro Glu 2405	Met His Leu Ile	His 2410	Ala Gly Lys Gly	Glu Ala Ile Arg 2415
Ile Arg 2420	Ser Ile Leu Arg	Ser 2425	Leu Ile Pro Leu	Gly Asp Leu Val 2430
Gly Val 2435	Ile Ser Ile Ala	Phe 2440	Gln Met Pro Thr	Ile Ala Lys Asp 2445
Gly Lys 2450	Val Val Glu Pro	Asp 2455	Met Ser Ala Gly	Phe Cys Pro Asp 2460
His Lys 2465	Ala Ala Met Val	Leu 2470	Phe Leu Asp Arg	Val Tyr Gly Ile 2475
Glu Val 2480	Gln Asp Phe Leu	Leu 2485	His Leu Leu Glu	Val Gly Phe Leu 2490
Pro Asp 2495	Leu Arg Ala Ala	Ala 2500	Ser Leu Asp Thr	Ala Ala Leu Ser 2505
Ala Thr 2510	Asp Met Ala Leu	Ala 2515	Leu Asn Arg Tyr	Leu Cys Thr Ala 2520
Val Leu 2525	Pro Leu Leu Thr	Arg 2530	Cys Ala Arg Leu	Phe Ala Gly Thr 2535
Glu His	His Ala Ser Leu	Ile Asp	Ser Leu Leu His	Thr Val Tyr

2540	2545	2550
Arg Leu Ser Lys Gly Cys Ser	Leu Thr Lys Ala Gln	Arg Asp Ser
2555	2560	2565
Ile Glu Val Cys Leu Leu Ser	Ile Cys Gly Gln Leu	Arg Pro Ser
2570	2575	2580
Met Met Gln His Leu Leu Arg	Arg Leu Val Phe Asp	Val Pro Leu
2585	2590	2595
Leu Asn Glu His Ala Lys Met	Pro Leu Lys Leu Leu	Thr Asn His
2600	2605	2610
Tyr Glu Arg Cys Trp Lys Tyr	Tyr Cys Leu Pro Gly	Gly Trp Gly
2615	2620	2625
Asn Phe Gly Ala Ala Ser Glu	Glu Glu Leu His Leu	Ser Arg Lys
2630	2635	2640
Leu Phe Trp Gly Ile Phe Asp	Ala Leu Ser Gln Lys	Lys Tyr Glu
2645	2650	2655
Gln Glu Leu Phe Lys Leu Ala	Leu Pro Cys Leu Ser	Ala Val Ala
2660	2665	2670
Gly Ala Leu Pro Pro Asp Tyr	Met Glu Ser Asn Tyr	Val Ser Met
2675	2680	2685
Met Glu Lys Gln Ser Ser Met	Asp Ser Glu Gly Asn	Phe Asn Pro
2690	2695	2700
Gln Pro Val Asp Thr Ser Asn	Ile Thr Ile Pro Glu	Lys Leu Glu
2705	2710	2715
Tyr Phe Ile Asn Lys Tyr Ala	Glu His Ser His Asp	Lys Trp Ser
2720	2725	2730
Met Asp Lys Leu Ala Asn Gly	Trp Ile Tyr Gly Glu	Ile Tyr Ser
2735	2740	2745
Asp Ser Ser Lys Ile Gln Pro	Leu Met Lys Pro Tyr	Lys Leu Leu
2750	2755	2760
Ser Glu Lys Glu Lys Glu Ile	Tyr Arg Trp Pro Ile	Lys Glu Ser
2765	2770	2775
Leu Lys Thr Met Leu Ala Trp	Gly Trp Arg Ile Glu	Arg Thr Arg
2780	2785	2790
Glu Gly Asp Ser Met Ala Leu	Tyr Asn Arg Thr Arg	Arg Ile Ser
2795	2800	2805
Gln Thr Ser Gln Val Ser Ile	Asp Ala Ala His Gly	Tyr Ser Pro
2810	2815	2820
Arg Ala Ile Asp Met Ser Asn	Val Thr Leu Ser Arg	Asp Leu His
2825	2830	2835
Ala Met Ala Glu Met Met Ala	Glu Asn Tyr His Asn	Ile Trp Ala

2840		2845		2850	
Lys Lys Lys Lys Leu Glu	Leu Glu Ser Lys Gly Gly	Gly Asn His			
2855	2860	2865			
Pro Leu Leu Val Pro Tyr Asp	Thr Leu Thr Ala Lys	Glu Lys Ala			
2870	2875	2880			
Lys Asp Arg Glu Lys Ala Gln	Asp Ile Phe Lys Phe	Leu Gln Ile			
2885	2890	2895			
Ser Gly Tyr Val Val Ser Arg	Gly Phe Lys Asp Leu	Asp Leu Asp			
2900	2905	2910			
Thr Pro Ser Ile Glu Lys Arg	Phe Ala Tyr Ser Phe	Leu Gln Gln			
2915	2920	2925			
Leu Ile Arg Tyr Val Asp Glu	Ala His Gln Tyr Ile	Leu Glu Phe			
2930	2935	2940			
Asp Gly Gly Ser Arg Ser Lys	Gly Glu His Phe Pro	Tyr Glu Gln			
2945	2950	2955			
Glu Ile Lys Phe Phe Ala Lys	Val Val Leu Pro Leu	Ile Asp Gln			
2960	2965	2970			
Tyr Phe Lys Asn His Arg Leu	Tyr Phe Leu Ser Ala	Ala Ser Arg			
2975	2980	2985			
Pro Leu Cys Thr Gly Gly His	Ala Ser Asn Lys Glu	Lys Glu Met			
2990	2995	3000			
Val Thr Ser Leu Phe Cys Lys	Leu Gly Val Leu Val	Arg His Arg			
3005	3010	3015			
Ile Ser Leu Phe Gly Asn Asp	Ala Thr Ser Ile Val	Asn Cys Leu			
3020	3025	3030			
His Ile Leu Gly Gln Thr Leu	Asp Ala Arg Thr Val	Met Lys Thr			
3035	3040	3045			
Gly Leu Asp Ser Val Lys Ser	Ala Leu Arg Ala Phe	Leu Asp Asn			
3050	3055	3060			
Ala Ala Glu Asp Leu Glu Lys	Thr Met Glu Asn Leu	Lys Gln Gly			
3065	3070	3075			
Gln Phe Thr His Thr Arg Ser	Gln Pro Lys Gly Val	Thr Gln Ile			
3080	3085	3090			
Ile Asn Tyr Thr Thr Val Ala	Leu Leu Pro Met Leu	Ser Ser Leu			
3095	3100	3105			
Phe Glu His Ile Gly Gln His	Gln Phe Gly Glu Asp	Leu Ile Leu			
3110	3115	3120			
Glu Asp Val Gln Val Ser Cys	Tyr Arg Ile Leu Thr	Ser Leu Tyr			
3125	3130	3135			
Ala Leu Gly Thr Ser Lys Ser	Ile Tyr Val Glu Arg	Gln Arg Ser			

3140	3145	3150
Ala Leu Gly Glu Cys Leu	Ala Ala Phe Ala Gly	Ala Phe Pro Ile
3155	3160	3165
Ala Phe Leu Glu Thr His	Leu Asp Lys His Asn	Val Tyr Ser Ile
3170	3175	3180
Tyr Asn Thr Arg Ser Ser	Arg Glu Arg Thr Ala	Leu Ser Leu Pro
3185	3190	3195
Ala Asn Val Glu Asp Val	Cys Pro Asn Ile Pro	Ser Leu Glu Lys
3200	3205	3210
Leu Met Thr Glu Ile Ile	Glu Leu Ala Glu Ser	Gly Ile Arg Tyr
3215	3220	3225
Thr Gln Met Pro Tyr Met	Met Glu Val Val Leu	Pro Met Leu Cys
3230	3235	3240
Ser Tyr Met Ser Arg Trp	Trp Glu His Gly Pro	Glu Asn His Pro
3245	3250	3255
Glu Arg Ala Glu Met Cys	Cys Thr Ala Leu Asn	Ser Glu His Met
3260	3265	3270
Asn Thr Leu Leu Gly Asn	Ile Leu Lys Ile Ile	Tyr Asn Asn Leu
3275	3280	3285
Gly Ile Asp Glu Gly Ala	Trp Met Lys Arg Leu	Ala Val Phe Ser
3290	3295	3300
Gln Pro Ile Ile Asn Lys	Val Lys Pro Gln Leu	Leu Lys Thr His
3305	3310	3315
Phe Leu Pro Leu Met Glu	Lys Leu Lys Lys Lys	Ala Ala Met Val
3320	3325	3330
Val Ser Glu Glu Asp His	Leu Lys Ala Glu Ala	Arg Gly Asp Met
3335	3340	3345
Ser Glu Ala Glu Leu Leu	Ile Leu Asp Glu Phe	Thr Thr Leu Ala
3350	3355	3360
Arg Asp Leu Tyr Ala Phe	Tyr Pro Leu Leu Ile	Arg Phe Val Asp
3365	3370	3375
Tyr Asn Arg Ala Lys Trp	Leu Lys Glu Pro Asn	Pro Glu Ala Glu
3380	3385	3390
Glu Leu Phe Arg Met Val	Ala Glu Val Phe Ile	Tyr Trp Ser Lys
3395	3400	3405
Ser His Asn Phe Lys Arg	Glu Glu Gln Asn Phe	Val Val Gln Asn
3410	3415	3420
Glu Ile Asn Asn Met Ser	Phe Leu Ile Thr Asp	Thr Lys Ser Lys
3425	3430	3435
Met Ser Lys Ala Ala Ile	Ser Asp Gln Glu Arg	Lys Lys Met Lys

3440	3445	3450
Arg Lys Gly Asp Arg Tyr Ser Met Gln Thr Ser Leu Ile Val Ala		
3455	3460	3465
Ala Leu Lys Arg Leu Leu Pro Ile Gly Leu Asn Ile Cys Ala Pro		
3470	3475	3480
Gly Asp Gln Glu Leu Ile Ala Leu Ala Lys Asn Arg Phe Ser Leu		
3485	3490	3495
Lys Asp Thr Glu Glu Glu Val Arg Asp Ile Ile Arg Ser Asn Ile		
3500	3505	3510
His Leu Gln Gly Lys Leu Glu Asp Pro Ala Ile Arg Trp Gln Met		
3515	3520	3525
Ala Leu Tyr Lys Asp Phe Pro Asn Arg Thr Glu Asp Pro Ser Asp		
3530	3535	3540
Pro Glu Arg Thr Val Glu Arg Val Leu Gly Ile Ala Asn Val Leu		
3545	3550	3555
Phe His Leu Glu Gln Lys Ser Lys Tyr Thr Gly Arg Gly Tyr Phe		
3560	3565	3570
Ser Leu Val Glu His Pro Gln Arg Ser Lys Lys Ala Val Trp His		
3575	3580	3585
Lys Leu Leu Ser Lys Gln Arg Lys Arg Ala Val Val Ala Cys Phe		
3590	3595	3600
Arg Met Ala Pro Leu Tyr Asn Leu Pro Arg His Arg Ala Val Asn		
3605	3610	3615
Leu Phe Leu Gln Gly Tyr Glu Lys Ser Trp Ile Glu Thr Glu Glu		
3620	3625	3630
His Tyr Phe Glu Asp Lys Leu Ile Glu Asp Leu Ala Lys Pro Gly		
3635	3640	3645
Ala Glu Leu Pro Glu Glu Asp Glu Ala Met Lys Arg Val Asp Pro		
3650	3655	3660
Leu His Gln Leu Ile Leu Leu Phe Ser Arg Thr Ala Leu Thr Glu		
3665	3670	3675
Lys Cys Lys Leu Glu Glu Asp Phe Leu Tyr Met Ala Tyr Ala Asp		
3680	3685	3690
Ile Met Ala Lys Ser Cys His Asp Glu Glu Asp Asp Asp Gly Glu		
3695	3700	3705
Glu Glu Val Lys Ser Phe Glu Glu Lys Glu Met Glu Lys Gln Lys		
3710	3715	3720
Leu Leu Tyr Gln Gln Ala Arg Leu His Asp Arg Gly Ala Ala Glu		
3725	3730	3735
Met Val Leu Gln Thr Ile Ser Ala Ser Lys Gly Glu Thr Gly Pro		



3740	3745	3750
Met Val Ala Ala Thr Leu Lys	Leu Gly Ile Ala Ile	Leu Asn Gly
3755	3760	3765
Gly Asn Ser Thr Val Gln Gln	Lys Met Leu Asp Tyr	Leu Lys Glu
3770	3775	3780
Lys Lys Asp Val Gly Phe Phe	Gln Ser Leu Ala Gly	Leu Met Gln
3785	3790	3795
Ser Cys Ser Val Leu Asp Leu	Asn Ala Phe Glu Arg	Gln Asn Lys
3800	3805	3810
Ala Glu Gly Leu Gly Met Val	Thr Glu Glu Gly Ser	Gly Glu Lys
3815	3820	3825
Val Leu Gln Asp Asp Glu Phe	Thr Cys Asp Leu Phe	Arg Phe Leu
3830	3835	3840
Gln Leu Leu Cys Glu Gly His	Asn Ser Asp Phe Gln	Asn Tyr Leu
3845	3850	3855
Arg Thr Gln Thr Gly Asn Asn	Thr Thr Val Asn Ile	Ile Ile Ser
3860	3865	3870
Thr Val Asp Tyr Leu Leu Arg	Val Gln Glu Ser Ile	Ser Asp Phe
3875	3880	3885
Tyr Trp Tyr Tyr Ser Gly Lys	Asp Ile Ile Asp Glu	Gln Gly Gln
3890	3895	3900
Arg Asn Phe Ser Lys Ala Ile	Gln Val Ala Lys Gln	Val Phe Asn
3905	3910	3915
Thr Leu Thr Glu Tyr Ile Gln	Gly Pro Cys Thr Gly	Asn Gln Gln
3920	3925	3930
Ser Leu Ala His Ser Arg Leu	Trp Asp Ala Val Val	Gly Phe Leu
3935	3940	3945
His Val Phe Ala His Met Gln	Met Lys Leu Ser Gln	Asp Ser Ser
3950	3955	3960
Gln Ile Glu Leu Leu Lys Glu	Leu Met Asp Leu Gln	Lys Asp Met
3965	3970	3975
Val Val Met Leu Leu Ser Met	Leu Glu Gly Asn Val	Val Asn Gly
3980	3985	3990
Thr Ile Gly Lys Gln Met Val	Asp Met Leu Val Glu	Ser Ser Asn
3995	4000	4005
Asn Val Glu Met Ile Leu Lys	Phe Phe Asp Met Phe	Leu Lys Leu
4010	4015	4020
Lys Asp Leu Thr Ser Ser Asp	Thr Phe Lys Glu Tyr	Asp Pro Asp
4025	4030	4035
Gly Lys Gly Val Ile Ser Lys	Arg Asp Phe His Lys	Ala Met Glu

4040	4045	4050
Ser His Lys His Tyr Thr Gln	Ser Glu Thr Glu Phe	Leu Leu Ser
4055	4060	4065
Cys Ala Glu Thr Asp Glu Asn	Glu Thr Leu Asp Tyr	Glu Glu Phe
4070	4075	4080
Val Lys Arg Phe His Glu Pro	Ala Lys Asp Ile Gly	Phe Asn Val
4085	4090	4095
Ala Val Leu Leu Thr Asn Leu	Ser Glu His Met Pro	Asn Asp Thr
4100	4105	4110
Arg Leu Gln Thr Phe Leu Glu	Leu Ala Glu Ser Val	Leu Asn Tyr
4115	4120	4125
Phe Gln Pro Phe Leu Gly Arg	Ile Glu Ile Met Gly	Ser Ala Lys
4130	4135	4140
Arg Ile Glu Arg Val Tyr Phe	Glu Ile Ser Glu Ser	Ser Arg Thr
4145	4150	4155
Gln Trp Glu Lys Pro Gln Val	Lys Glu Ser Lys Arg	Gln Phe Ile
4160	4165	4170
Phe Asp Val Val Asn Glu Gly	Gly Glu Lys Glu Lys	Met Glu Leu
4175	4180	4185
Phe Val Asn Phe Cys Glu Asp	Thr Ile Phe Glu Met	Gln Leu Ala
4190	4195	4200
Ala Gln Ile Ser Glu Ser Asp	Leu Asn Glu Arg Leu	Ala Asn Lys
4205	4210	4215
Glu Glu Ser Glu Lys Glu Arg	Pro Glu Glu Gln Ala	Pro Arg Met
4220	4225	4230
Gly Phe Phe Ser Leu Leu Thr	Ile Gln Ser Ala Leu	Phe Ala Leu
4235	4240	4245
Arg Tyr Asn Val Leu Thr Leu	Val Arg Met Leu Ser	Leu Lys Ser
4250	4255	4260
Leu Lys Lys Gln Met Lys Arg	Met Lys Lys Met Thr	Val Lys Asp
4265	4270	4275
Met Val Leu Ala Phe Phe Ser	Ser Tyr Trp Ser Val	Phe Val Thr
4280	4285	4290
Leu Leu His Phe Val Ala Ser	Val Cys Arg Gly Phe	Phe Arg Ile
4295	4300	4305
Val Ser Ser Leu Leu Leu Gly	Gly Ser Leu Val Glu	Gly Ala Lys
4310	4315	4320
Lys Ile Lys Val Ala Glu Leu	Leu Ala Asn Met Pro	Asp Pro Thr
4325	4330	4335
Gln Asp Glu Val Arg Gly Asp	Glu Glu Glu Gly Glu	Arg Lys Pro

4340	4345	4350
Leu Glu Ser Ala Leu Pro	Ser Glu Asp Leu Thr	Asp Leu Lys Glu
4355	4360	4365
Leu Thr Glu Glu Ser Asp	Leu Leu Ser Asp Ile	Phe Gly Leu Asp
4370	4375	4380
Leu Lys Arg Glu Gly Gly	Gln Tyr Lys Leu Ile	Pro His Asn Pro
4385	4390	4395
Asn Ala Gly Leu Ser Asp	Leu Met Thr Asn Pro	Val Pro Val Pro
4400	4405	4410
Glu Val Gln Glu Lys Phe	Gln Glu Gln Lys Ala	Lys Glu Glu Lys
4415	4420	4425
Glu Glu Lys Glu Glu Thr	Lys Ser Glu Pro Glu	Lys Ala Glu Gly
4430	4435	4440
Glu Asp Gly Glu Lys Glu	Glu Lys Ala Lys Asp	Glu Lys Ser Lys
4445	4450	4455
Gln Lys Leu Arg Gln Leu	His Thr His Arg Tyr	Gly Glu Pro Glu
4460	4465	4470
Val Pro Glu Ser Ala Phe	Trp Lys Lys Ile Ile	Ala Tyr Gln Gln
4475	4480	4485
Lys Leu Leu Asn Tyr Phe	Ala Arg Asn Phe Tyr	Asn Met Arg Met
4490	4495	4500
Leu Ala Leu Phe Val Ala	Phe Ala Ile Asn Phe	Ile Leu Leu Phe
4505	4510	4515
Tyr Lys Val Ser Thr Ser	Ser Val Val Glu Gly	Lys Glu Leu Pro
4520	4525	4530
Thr Arg Thr Ser Ser Asp	Thr Ala Lys Val Thr	Asn Ser Leu Asp
4535	4540	4545
Ser Ser Pro His Arg Ile	Ile Ala Val His Tyr	Val Leu Glu Glu
4550	4555	4560
Ser Ser Gly Tyr Met Glu	Pro Thr Leu Arg Ile	Leu Ala Ile Leu
4565	4570	4575
His Thr Ile Ile Ser Phe	Phe Cys Ile Ile Gly	Tyr Tyr Cys Leu
4580	4585	4590
Lys Val Pro Leu Val Ile	Phe Lys Arg Glu Lys	Glu Val Ala Arg
4595	4600	4605
Lys Leu Glu Phe Asp Gly	Leu Tyr Ile Thr Glu	Gln Pro Ser Glu
4610	4615	4620
Asp Asp Ile Lys Gly Gln	Trp Asp Arg Leu Val	Ile Asn Thr Gln
4625	4630	4635
Ser Phe Pro Asn Asn Tyr	Trp Asp Lys Phe Val	Lys Arg Lys Val

4640	4645	4650
Met Asp Lys Tyr Gly Glu Phe Tyr Gly Arg Asp Arg Ile Ser Glu 4655 4660 4665		
Leu Leu Gly Met Asp Lys Ala Ala Leu Asp Phe Ser Asp Ala Arg 4670 4675 4680		
Glu Lys Lys Lys Pro Lys Lys Asp Ser Ser Leu Ser Ala Val Leu 4685 4690 4695		
Asn Ser Ile Asp Val Lys Tyr Gln Met Trp Lys Leu Gly Val Val 4700 4705 4710		
Phe Thr Asp Asn Ser Phe Leu Tyr Leu Ala Trp Tyr Met Thr Met 4715 4720 4725		
Ser Val Leu Gly His Tyr Asn Asn Phe Phe Phe Ala Ala His Leu 4730 4735 4740		
Leu Asp Ile Ala Met Gly Phe Lys Thr Leu Arg Thr Ile Leu Ser 4745 4750 4755		
Ser Val Thr His Asn Gly Lys Gln Leu Val Leu Thr Val Gly Leu 4760 4765 4770		
Leu Ala Val Val Val Tyr Leu Tyr Thr Val Val Ala Phe Asn Phe 4775 4780 4785		
Phe Arg Lys Phe Tyr Asn Lys Ser Glu Asp Gly Asp Thr Pro Asp 4790 4795 4800		
Met Lys Cys Asp Asp Met Leu Thr Cys Tyr Met Phe His Met Tyr 4805 4810 4815		
Val Gly Val Arg Ala Gly Gly Gly Ile Gly Asp Glu Ile Glu Asp 4820 4825 4830		
Pro Ala Gly Asp Glu Tyr Glu Ile Tyr Arg Ile Ile Phe Asp Ile 4835 4840 4845		
Thr Phe Phe Phe Phe Val Ile Val Ile Leu Leu Ala Ile Ile Gln 4850 4855 4860		
Gly Leu Ile Ile Asp Ala Phe Gly Glu Leu Arg Asp Gln Gln Glu 4865 4870 4875		
Gln Val Lys Glu Asp Met Glu Thr Lys Cys Phe Ile Cys Gly Ile 4880 4885 4890		
Gly Asn Asp Tyr Phe Asp Thr Val Pro His Gly Phe Glu Thr His 4895 4900 4905		
Thr Leu Gln Glu His Asn Leu Ala Asn Tyr Leu Phe Phe Leu Met 4910 4915 4920		
Tyr Leu Ile Asn Lys Asp Glu Thr Glu His Thr Gly Gln Glu Ser 4925 4930 4935		
Tyr Val Trp Lys Met Tyr Gln Glu Arg Cys Trp Glu Phe Phe Pro		

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 Ala Gly Asp Cys Phe Arg Lys Gln Tyr Glu Asp Gln Leu Asn  
 4955                      4960                      4965  
  
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 <211> 4968  
 <212> PRT  
 <213> *Oryctolagus cuniculus*  
  
 <400> 61  
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 Asp Asp Glu Val Val Leu Gln Cys Thr Ala Thr Ile His Lys Glu Gln  
                     20                      25                      30  
 Gln Lys Leu Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg Leu Cys Phe  
                     35                      40                      45  
 Leu Glu Ser Thr Ser Asn Ser Lys Asn Val Pro Pro Asp Leu Ser Ile  
                     50                      55                      60  
 Cys Thr Phe Val Leu Glu Gln Ser Leu Ser Val Arg Ala Leu Gln Glu  
 65                      70                      75                      80  
 Met Leu Ala Asn Thr Val Glu Lys Ser Glu Gly Gln Val Asp Val Glu  
                     85                      90                      95  
 Lys Trp Lys Phe Met Met Lys Thr Ala Gln Gly Gly Gly His Arg Thr  
                     100                      105                      110  
 Leu Leu Tyr Gly His Ala Ile Leu Leu Arg His Ser Tyr Ser Gly Met  
                     115                      120                      125  
 Tyr Leu Cys Cys Leu Ser Thr Ser Arg Ser Ser Thr Asp Lys Leu Ala  
                     130                      135                      140  
 Phe Asp Val Gly Leu Gln Glu Asp Thr Thr Gly Glu Ala Cys Trp Trp  
 145                      150                      155                      160  
 Thr Ile His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg  
                     165                      170                      175  
 Val Gly Asp Asp Leu Ile Leu Val Ser Val Ser Ser Glu Arg Tyr Leu  
                     180                      185                      190  
 His Leu Ser Tyr Gly Asn Gly Ser Leu His Val Asp Ala Ala Phe Gln  
                     195                      200                      205  
 Gln Thr Leu Trp Ser Val Ala Pro Ile Ser Ser Gly Ser Glu Ala Ala  
                     210                      215                      220  
 Gln Gly Tyr Leu Ile Gly Gly Asp Val Leu Arg Leu Leu His Gly His  
 225                      230                      235                      240  
 Met Asp Glu Cys Leu Thr Val Pro Ser Gly Glu His Gly Glu Glu Gln  
                     245                      250                      255

Arg Arg Thr Val His Tyr Glu Gly Gly Ala Val Ser Val His Ala Arg  
 260 265 270  
 Ser Leu Trp Arg Leu Glu Thr Leu Arg Val Ala Trp Ser Gly Ser His  
 275 280 285  
 Ile Arg Trp Gly Gln Pro Phe Arg Leu Arg His Val Thr Thr Gly Lys  
 290 295 300  
 Tyr Leu Ser Leu Met Glu Asp Lys Asn Leu Leu Leu Met Asp Lys Glu  
 305 310 315 320  
 Lys Ala Asp Val Lys Ser Thr Ala Phe Thr Phe Arg Ser Ser Lys Glu  
 325 330 335  
 Lys Leu Asp Gly Gly Val Arg Lys Glu Val Asp Gly Met Gly Thr Ser  
 340 345 350  
 Glu Ile Lys Tyr Gly Asp Ser Ile Cys Tyr Ile Gln His Val Asp Thr  
 355 360 365  
 Gly Leu Trp Leu Thr Tyr Gln Ser Val Asp Val Lys Ser Val Arg Met  
 370 375 380  
 Gly Ser Ile Gln Arg Lys Ala Ile Met His His Glu Gly His Met Asp  
 385 390 395 400  
 Asp Gly Leu Asn Leu Ser Arg Ser Gln His Glu Glu Ser Arg Thr Ala  
 405 410 415  
 Arg Val Ile Arg Ser Thr Val Phe Leu Phe Asn Arg Phe Ile Arg Gly  
 420 425 430  
 Leu Asp Ala Leu Ser Lys Lys Ala Lys Ala Ser Ser Val Asp Leu Pro  
 435 440 445  
 Ile Glu Ser Val Ser Leu Ser Leu Gln Asp Leu Ile Gly Tyr Phe His  
 450 455 460  
 Pro Pro Asp Glu His Leu Glu His Glu Asp Lys Gln Asn Arg Leu Arg  
 465 470 475 480  
 Ala Leu Lys Asn Arg Gln Asn Leu Phe Gln Glu Glu Gly Met Ile Asn  
 485 490 495  
 Leu Val Leu Glu Cys Ile Asp Arg Leu His Val Tyr Ser Ser Ala Ala  
 500 505 510  
 His Phe Ala Asp Val Ala Gly Arg Glu Ala Gly Glu Ser Trp Lys Ser  
 515 520 525  
 Ile Leu Asn Ser Leu Tyr Glu Leu Leu Ala Ala Leu Ile Arg Gly Asn  
 530 535 540  
 Arg Lys Asn Cys Ala Gln Phe Ser Gly Ser Leu Asp Trp Leu Ile Ser  
 545 550 555 560  
 Arg Leu Glu Arg Leu Glu Ala Ser Ser Gly Ile Leu Glu Val Leu His  
 565 570 575

Cys Val Leu Val Glu Ser Pro Glu Ala Leu Asn Ile Ile Lys Glu Gly  
 580 585 590  
 His Ile Lys Ser Ile Ile Ser Leu Leu Asp Lys His Gly Arg Asn His  
 595 600 605  
 Lys Val Leu Asp Val Leu Cys Ser Leu Cys Val Cys His Gly Val Ala  
 610 615 620  
 Val Arg Ser Asn Gln His Leu Ile Cys Asp Asn Leu Leu Pro Gly Arg  
 625 630 635 640  
 Asp Leu Leu Leu Gln Thr Arg Leu Val Asn His Val Ser Ser Met Arg  
 645 650 655  
 Pro Asn Ile Phe Leu Gly Val Ser Glu Gly Ser Ala Gln Tyr Lys Lys  
 660 665 670  
 Trp Tyr Tyr Glu Leu Met Val Asp His Thr Glu Pro Phe Val Thr Ala  
 675 680 685  
 Glu Ala Thr His Leu Arg Val Gly Trp Ala Ser Thr Glu Gly Tyr Ser  
 690 695 700  
 Pro Tyr Pro Gly Gly Gly Glu Glu Trp Gly Gly Asn Gly Val Gly Asp  
 705 710 715 720  
 Asp Leu Phe Ser Tyr Gly Phe Asp Gly Leu His Leu Trp Ser Gly Cys  
 725 730 735  
 Ile Ala Arg Thr Val Ser Ser Pro Asn Gln His Leu Leu Arg Thr Asp  
 740 745 750  
 Asp Val Ile Ser Cys Cys Leu Asp Leu Ser Ala Pro Ser Ile Ser Phe  
 755 760 765  
 Arg Ile Asn Gly Gln Pro Val Gln Gly Met Phe Glu Asn Phe Asn Ile  
 770 775 780  
 Asp Gly Leu Phe Phe Pro Val Val Ser Phe Ser Ala Gly Ile Lys Val  
 785 790 795 800  
 Arg Phe Leu Leu Gly Gly Arg His Gly Glu Phe Lys Phe Leu Pro Pro  
 805 810 815  
 Pro Gly Tyr Ala Pro Cys Tyr Glu Ala Val Leu Pro Lys Glu Lys Leu  
 820 825 830  
 Lys Val Glu His Ser Arg Glu Tyr Lys Gln Glu Arg Thr Tyr Thr Arg  
 835 840 845  
 Asp Leu Leu Gly Pro Thr Val Ser Leu Thr Gln Ala Ala Phe Thr Pro  
 850 855 860  
 Ile Pro Val Asp Thr Ser Gln Ile Val Leu Pro Pro His Leu Glu Arg  
 865 870 875 880  
 Ile Arg Glu Lys Leu Ala Glu Asn Ile His Glu Leu Trp Val Met Asn  
 885 890 895

Lys Ile Glu Leu Gly Trp Gln Tyr Gly Pro Val Arg Asp Asp Asn Lys  
                   900                                  905                                  910  
 Arg Gln His Pro Cys Leu Val Glu Phe Ser Lys Leu Pro Glu Gln Glu  
                   915                                  920                                  925  
 Arg Asn Tyr Asn Leu Gln Met Ser Leu Glu Thr Leu Lys Thr Leu Leu  
                   930                                  935                                  940  
 Ala Leu Gly Cys His Val Gly Ile Ser Asp Glu His Ala Glu Glu Lys  
                   945                                  950                                  955                                  960  
 Val Lys Lys Met Lys Leu Pro Lys Asn Tyr Gln Leu Thr Ser Gly Tyr  
                   965                                  970                                  975  
 Lys Pro Ala Pro Met Asp Leu Ser Phe Ile Lys Leu Thr Pro Ser Gln  
                   980                                  985                                  990  
 Glu Ala Met Val Asp Lys Leu Ala Glu Asn Ala His Asn Val Trp Ala  
                   995                                  1000                                  1005  
 Arg Asp Arg Ile Arg Gln Gly Trp Thr Tyr Gly Ile Gln Gln Asp  
                   1010                                  1015                                  1020  
 Val Lys Asn Arg Arg Asn Pro Arg Leu Val Pro Tyr Thr Leu Leu  
                   1025                                  1030                                  1035  
 Asp Asp Arg Thr Lys Lys Ser Asn Lys Asp Ser Leu Arg Glu Ala  
                   1040                                  1045                                  1050  
 Val Arg Thr Leu Leu Gly Tyr Gly Tyr Asn Leu Glu Ala Pro Asp  
                   1055                                  1060                                  1065  
 Gln Asp His Ala Ala Arg Ala Glu Val Cys Ser Gly Thr Gly Glu  
                   1070                                  1075                                  1080  
 Arg Phe Arg Ile Phe Arg Ala Glu Lys Thr Tyr Ala Val Lys Ala  
                   1085                                  1090                                  1095  
 Gly Arg Trp Tyr Phe Glu Phe Glu Ala Val Thr Ser Gly Asp Met  
                   1100                                  1105                                  1110  
 Arg Val Gly Trp Ser Arg Pro Gly Cys Gln Pro Asp Gln Glu Leu  
                   1115                                  1120                                  1125  
 Gly Ser Asp Glu Arg Ala Phe Ala Phe Asp Gly Phe Lys Ala Gln  
                   1130                                  1135                                  1140  
 Arg Trp His Gln Gly Asn Glu His Tyr Gly Arg Ser Trp Gln Ala  
                   1145                                  1150                                  1155  
 Gly Asp Val Val Gly Cys Met Val Asp Met Asn Glu His Thr Met  
                   1160                                  1165                                  1170  
 Met Phe Thr Leu Asn Gly Glu Ile Leu Leu Asp Asp Ser Gly Ser  
                   1175                                  1180                                  1185  
 Glu Leu Ala Phe Lys Asp Phe Asp Val Gly Asp Gly Phe Ile Pro  
                   1190                                  1195                                  1200



Val Cys	Ser Leu Gly	Val Ala	Gln Val Gly Arg	Met Asn Phe Gly
1205		1210		1215
Lys Asp	Val Ser Thr Leu	Lys Tyr Phe Thr Ile	Cys Gly Leu Gln	
1220		1225	1230	
Glu Gly	Tyr Glu Pro Phe	Ala Val Asn Thr Asn	Arg Asp Ile Thr	
1235		1240	1245	
Met Trp	Leu Ser Lys Arg	Leu Pro Gln Phe Leu	Gln Val Pro Ser	
1250		1255	1260	
Asn His	Glu His Ile Glu	Val Thr Arg Ile Asp	Gly Thr Ile Asp	
1265		1270	1275	
Ser Ser	Pro Cys Leu Lys	Val Thr Gln Lys Ser	Phe Gly Ser Gln	
1280		1285	1290	
Asn Ser	Asn Thr Asp Ile	Met Phe Tyr Arg Leu	Ser Met Pro Ile	
1295		1300	1305	
Glu Cys	Ala Glu Val Phe	Ser Lys Thr Val Pro	Gly Gly Leu Pro	
1310		1315	1320	
Gly Ala	Gly Leu Phe Gly	Pro Lys Asn Asp Leu	Glu Asp Tyr Asp	
1325		1330	1335	
Ala Asp	Ser Asp Phe Glu	Val Leu Met Lys Thr	Ala His Gly His	
1340		1345	1350	
Leu Val	Pro Asp Arg Val	Asp Lys Asp Lys Glu	Thr Thr Lys Ala	
1355		1360	1365	
Glu Phe	Asn Asn His Lys	Asp Tyr Ala Gln Glu	Lys Pro Ser Arg	
1370		1375	1380	
Leu Lys	Gln Arg Phe Leu	Leu Arg Arg Thr Lys	Pro Asp Tyr Ser	
1385		1390	1395	
Thr Ser	His Ser Ala Arg	Leu Thr Glu Asp Val	Leu Ala Asp Asp	
1400		1405	1410	
Arg Asp	Asp Tyr Asp Phe	Leu Met Gln Thr Ser	Thr Tyr Tyr Tyr	
1415		1420	1425	
Ser Val	Arg Ile Phe Pro	Gly Gln Glu Pro Ala	Asn Val Trp Val	
1430		1435	1440	
Gly Trp	Ile Thr Ser Asp	Phe His Gln Tyr Asp	Thr Gly Phe Asp	
1445		1450	1455	
Leu Asp	Arg Val Arg Thr	Val Thr Val Thr Leu	Gly Asp Glu Lys	
1460		1465	1470	
Gly Lys	Val His Glu Ser	Ile Lys Arg Ser Asn	Cys Tyr Met Val	
1475		1480	1485	
Cys Ala	Gly Glu Ser Met	Ser Pro Gly Gln Gly	Arg Asn Asn Asn	
1490		1495	1500	

Gly	Leu	Glu	Ile	Gly	Cys	Val	Val	Asp	Ala	Ala	Ser	Gly	Leu	Leu
1505						1510					1515			
Thr	Phe	Ile	Ala	Asn	Gly	Lys	Glu	Leu	Ser	Thr	Tyr	Tyr	Gln	Val
1520						1525					1530			
Glu	Pro	Ser	Thr	Lys	Leu	Phe	Pro	Ala	Val	Phe	Ala	Gln	Ala	Thr
1535						1540					1545			
Ser	Pro	Asn	Val	Phe	Gln	Phe	Glu	Leu	Gly	Arg	Ile	Lys	Asn	Val
1550						1555					1560			
Met	Pro	Leu	Ser	Ala	Gly	Leu	Phe	Lys	Ser	Glu	His	Lys	Asn	Pro
1565						1570					1575			
Val	Pro	Gln	Cys	Pro	Pro	Arg	Leu	His	Val	Gln	Phe	Leu	Ser	His
1580						1585					1590			
Val	Leu	Trp	Ser	Arg	Met	Pro	Asn	Gln	Phe	Leu	Lys	Val	Asp	Val
1595						1600					1605			
Ser	Arg	Ile	Ser	Glu	Arg	Gln	Gly	Trp	Leu	Val	Gln	Cys	Leu	Asp
1610						1615					1620			
Pro	Leu	Gln	Phe	Met	Ser	Leu	His	Ile	Pro	Glu	Glu	Asn	Arg	Ser
1625						1630					1635			
Val	Asp	Ile	Leu	Glu	Leu	Thr	Glu	Gln	Glu	Glu	Leu	Leu	Lys	Phe
1640						1645					1650			
His	Tyr	His	Thr	Leu	Arg	Leu	Tyr	Ser	Ala	Val	Cys	Ala	Leu	Gly
1655						1660					1665			
Asn	His	Arg	Val	Ala	His	Ala	Leu	Cys	Ser	His	Val	Asp	Glu	Pro
1670						1675					1680			
Gln	Leu	Leu	Tyr	Ala	Ile	Glu	Asn	Lys	Tyr	Met	Pro	Gly	Leu	Leu
1685						1690					1695			
Arg	Thr	Gly	Tyr	Tyr	Asp	Leu	Leu	Ile	Asp	Ile	His	Leu	Ser	Ser
1700						1705					1710			
Tyr	Ala	Thr	Ala	Arg	Leu	Met	Met	Asn	Asn	Glu	Phe	Ile	Val	Pro
1715						1720					1725			
Met	Thr	Glu	Glu	Thr	Lys	Ser	Ile	Thr	Leu	Phe	Pro	Asp	Glu	Asn
1730						1735					1740			
Lys	Lys	His	Gly	Leu	Pro	Gly	Ile	Gly	Leu	Ser	Thr	Ser	Leu	Arg
1745						1750					1755			
Pro	Arg	Met	Gln	Phe	Ser	Ser	Pro	Ser	Phe	Val	Ser	Ile	Asn	Asn
1760						1765					1770			
Glu	Cys	Tyr	Gln	Tyr	Ser	Pro	Glu	Phe	Pro	Leu	Asp	Ile	Leu	Lys
1775						1780					1785			
Ala	Lys	Thr	Ile	Gln	Met	Leu	Thr	Glu	Ala	Val	Lys	Glu	Gly	Ser
1790						1795					1800			

Leu	His	Ala	Arg	Asp	Pro	Val	Gly	Gly	Thr	Thr	Glu	Phe	Leu	Phe
1805						1810					1815			
Val	Pro	Leu	Ile	Lys	Leu	Phe	Tyr	Thr	Leu	Leu	Ile	Met	Gly	Ile
1820						1825					1830			
Phe	His	Asn	Glu	Asp	Leu	Arg	His	Ile	Leu	Gln	Leu	Ile	Glu	Pro
1835						1840					1845			
Ser	Val	Phe	Lys	Asp	Ala	Ala	Thr	Pro	Glu	Glu	Glu	Gly	Asp	Thr
1850						1855					1860			
Leu	Glu	Glu	Glu	Pro	Ser	Val	Glu	Asp	Thr	Lys	Leu	Glu	Gly	Ala
1865						1870					1875			
Gly	Glu	Glu	Glu	Ala	Lys	Met	Gly	Lys	Arg	Pro	Lys	Glu	Gly	Leu
1880						1885					1890			
Leu	Gln	Met	Lys	Leu	Pro	Glu	Pro	Val	Lys	Leu	Gln	Met	Cys	Leu
1895						1900					1905			
Leu	Leu	Gln	Tyr	Leu	Cys	Asp	Cys	Gln	Val	Arg	His	Arg	Ile	Glu
1910						1915					1920			
Ala	Ile	Val	Ala	Phe	Ser	Asp	Asp	Phe	Val	Ala	Lys	Leu	Gln	Asp
1925						1930					1935			
Asn	Gln	Arg	Phe	Arg	Tyr	Asn	Glu	Val	Met	Gln	Ala	Leu	Asn	Met
1940						1945					1950			
Ser	Ala	Ala	Leu	Thr	Ala	Arg	Lys	Thr	Lys	Glu	Phe	Arg	Ser	Pro
1955						1960					1965			
Pro	Gln	Glu	Gln	Ile	Asn	Met	Leu	Leu	Asn	Phe	Lys	Asp	Asp	Lys
1970						1975					1980			
Ser	Glu	Cys	Pro	Cys	Pro	Glu	Glu	Ile	Arg	Asp	Gln	Leu	Leu	Asp
1985						1990					1995			
Phe	His	Glu	Asp	Leu	Met	Thr	His	Cys	Gly	Ile	Glu	Leu	Asp	Glu
2000						2005					2010			
Asp	Gly	Ser	Leu	Asp	Gly	Asn	Ser	Asp	Leu	Thr	Ile	Arg	Gly	Arg
2015						2020					2025			
Leu	Leu	Ser	Leu	Val	Glu	Lys	Val	Thr	Tyr	Leu	Lys	Lys	Lys	Gln
2030						2035					2040			
Thr	Glu	Lys	Pro	Val	Glu	Ser	Asp	Ser	Arg	Lys	Ser	Ser	Thr	Leu
2045						2050					2055			
Gln	Gln	Leu	Ile	Ser	Glu	Thr	Met	Val	Arg	Trp	Ala	Gln	Glu	Ser
2060						2065					2070			
Val	Ile	Glu	Asp	Pro	Glu	Leu	Val	Arg	Ala	Met	Phe	Val	Leu	Leu
2075						2080					2085			
His	Arg	Gln	Tyr	Asp	Gly	Ile	Gly	Gly	Leu	Val	Arg	Ala	Leu	Pro
2090						2095					2100			

Lys	Thr	Tyr	Thr	Ile	Asn	Gly	Val	Ser	Val	Glu	Asp	Thr	Ile	Asn
2105						2110					2115			
Leu	Leu	Ala	Ser	Leu	Gly	Gln	Ile	Arg	Ser	Leu	Leu	Ser	Val	Arg
2120						2125					2130			
Met	Gly	Lys	Glu	Glu	Glu	Lys	Leu	Met	Ile	Arg	Gly	Leu	Gly	Asp
2135						2140					2145			
Ile	Met	Asn	Asn	Lys	Val	Phe	Tyr	Gln	His	Pro	Asn	Leu	Met	Arg
2150						2155					2160			
Ala	Leu	Gly	Met	His	Glu	Thr	Val	Met	Glu	Val	Met	Val	Asn	Val
2165						2170					2175			
Leu	Gly	Gly	Gly	Glu	Ser	Lys	Glu	Ile	Thr	Phe	Pro	Lys	Met	Val
2180						2185					2190			
Ala	Asn	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Ile	Ser	Arg
2195						2200					2205			
Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Leu	Ser	Tyr	Leu	Leu	Glu
2210						2215					2220			
Asn	Ser	Ser	Val	Gly	Leu	Ala	Ser	Pro	Ala	Met	Arg	Gly	Ser	Thr
2225						2230					2235			
Pro	Leu	Asp	Val	Ala	Ala	Ala	Ser	Val	Met	Asp	Asn	Asn	Glu	Leu
2240						2245					2250			
Ala	Leu	Ala	Leu	Arg	Glu	Pro	Asp	Leu	Glu	Lys	Val	Val	Arg	Tyr
2255						2260					2265			
Leu	Ala	Gly	Cys	Gly	Leu	Gln	Ser	Cys	Gln	Met	Leu	Val	Ser	Lys
2270						2275					2280			
Gly	Tyr	Pro	Asp	Ile	Gly	Trp	Asn	Pro	Val	Glu	Gly	Glu	Arg	Tyr
2285						2290					2295			
Leu	Asp	Phe	Leu	Arg	Phe	Ala	Val	Phe	Cys	Asn	Gly	Glu	Ser	Val
2300						2305					2310			
Glu	Glu	Asn	Ala	Asn	Val	Val	Val	Arg	Leu	Leu	Ile	Arg	Arg	Pro
2315						2320					2325			
Glu	Cys	Phe	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Gly	Asn	Gly	Leu
2330						2335					2340			
Leu	Ala	Ala	Met	Glu	Glu	Ala	Ile	Lys	Ile	Ala	Glu	Asp	Pro	Ser
2345						2350					2355			
Arg	Asp	Gly	Pro	Ser	Pro	Thr	Ser	Gly	Ser	Ser	Lys	Thr	Leu	Asp
2360						2365					2370			
Thr	Glu	Glu	Glu	Glu	Asp	Asp	Thr	Ile	His	Met	Gly	Asn	Ala	Ile
2375						2380					2385			
Met	Thr	Phe	Tyr	Ala	Ala	Leu	Ile	Asp	Leu	Leu	Gly	Arg	Cys	Ala
2390						2395					2400			

Pro	Glu	Met	His	Leu	Ile	His	Ala	Gly	Lys	Gly	Glu	Ala	Ile	Arg
	2405					2410					2415			
Ile	Arg	Ser	Ile	Leu	Arg	Ser	Leu	Ile	Pro	Leu	Gly	Asp	Leu	Val
	2420					2425					2430			
Gly	Val	Ile	Ser	Ile	Ala	Phe	Gln	Met	Pro	Thr	Ile	Ala	Lys	Asp
	2435					2440					2445			
Gly	Asn	Val	Val	Glu	Pro	Asp	Met	Ser	Ala	Gly	Phe	Cys	Pro	Asp
	2450					2455					2460			
His	Lys	Ala	Ala	Met	Val	Leu	Phe	Leu	Asp	Arg	Val	Tyr	Gly	Ile
	2465					2470					2475			
Glu	Val	Gln	Asp	Phe	Leu	Leu	His	Leu	Leu	Glu	Val	Gly	Phe	Leu
	2480					2485					2490			
Pro	Asp	Leu	Arg	Ala	Ala	Ala	Ser	Leu	Asp	Thr	Ala	Ala	Leu	Ser
	2495					2500					2505			
Ala	Thr	Asp	Met	Ala	Leu	Ala	Leu	Asn	Arg	Tyr	Leu	Cys	Thr	Ala
	2510					2515					2520			
Val	Leu	Pro	Leu	Leu	Thr	Arg	Cys	Ala	Pro	Leu	Phe	Ala	Gly	Thr
	2525					2530					2535			
Glu	His	His	Ala	Ser	Leu	Ile	Asp	Ser	Leu	Leu	His	Thr	Val	Tyr
	2540					2545					2550			
Arg	Leu	Ser	Lys	Gly	Cys	Ser	Leu	Thr	Lys	Ala	Gln	Arg	Asp	Ser
	2555					2560					2565			
Ile	Glu	Val	Cys	Leu	Leu	Ser	Ile	Cys	Gly	Gln	Leu	Arg	Pro	Ser
	2570					2575					2580			
Met	Met	Gln	His	Leu	Leu	Arg	Arg	Leu	Val	Phe	Asp	Val	Pro	Leu
	2585					2590					2595			
Leu	Asn	Glu	His	Ala	Lys	Met	Pro	Leu	Lys	Leu	Leu	Thr	Asn	His
	2600					2605					2610			
Tyr	Glu	Arg	Cys	Trp	Lys	Tyr	Tyr	Cys	Leu	Pro	Gly	Gly	Trp	Gly
	2615					2620					2625			
Asn	Phe	Gly	Ala	Ala	Ser	Glu	Glu	Glu	Leu	His	Leu	Ser	Arg	Lys
	2630					2635					2640			
Leu	Phe	Trp	Gly	Ile	Phe	Asp	Ala	Leu	Ser	Gln	Lys	Lys	Tyr	Glu
	2645					2650					2655			
Gln	Glu	Leu	Phe	Lys	Leu	Ala	Leu	Pro	Cys	Leu	Ser	Ala	Val	Ala
	2660					2665					2670			
Gly	Ala	Leu	Pro	Pro	Asp	Tyr	Met	Glu	Ser	Asn	Tyr	Val	Ser	Met
	2675					2680					2685			
Met	Glu	Lys	Gln	Ser	Ser	Met	Asp	Ser	Glu	Gly	Asn	Phe	Asn	Pro
	2690					2695					2700			

Gln	Pro	Val	Asp	Thr	Ser	Asn	Ile	Ile	Ile	Pro	Glu	Lys	Leu	Glu
2705						2710					2715			
Tyr	Phe	Ile	Asn	Lys	Tyr	Ala	Glu	His	Ser	His	Asp	Lys	Trp	Ser
2720						2725					2730			
Met	Asp	Lys	Leu	Ala	Asn	Gly	Trp	Ile	Tyr	Gly	Glu	Ile	Tyr	Ser
2735						2740					2745			
Asp	Ser	Ser	Lys	Ile	Gln	Pro	Leu	Met	Lys	Pro	Tyr	Lys	Leu	Leu
2750						2755					2760			
Ser	Glu	Lys	Glu	Lys	Glu	Ile	Tyr	Arg	Trp	Pro	Ile	Lys	Glu	Ser
2765						2770					2775			
Leu	Lys	Thr	Met	Leu	Ala	Trp	Gly	Trp	Arg	Ile	Glu	Arg	Thr	Arg
2780						2785					2790			
Glu	Gly	Asp	Ser	Met	Ala	Leu	Tyr	Asn	Arg	Thr	Arg	Arg	Ile	Ser
2795						2800					2805			
Gln	Thr	Ser	Gln	Val	Ser	Val	Asp	Ala	Ala	His	Gly	Tyr	Ser	Pro
2810						2815					2820			
Arg	Ala	Ile	Asp	Met	Ser	Asn	Val	Thr	Leu	Ser	Arg	Asp	Leu	His
2825						2830					2835			
Ala	Met	Ala	Glu	Met	Met	Ala	Glu	Asn	Tyr	His	Asn	Ile	Trp	Ala
2840						2845					2850			
Lys	Lys	Lys	Lys	Leu	Glu	Leu	Glu	Ser	Lys	Gly	Gly	Gly	Asn	His
2855						2860					2865			
Pro	Leu	Leu	Val	Pro	Tyr	Asp	Thr	Leu	Thr	Ala	Lys	Glu	Lys	Ala
2870						2875					2880			
Lys	Asp	Arg	Glu	Lys	Ala	Gln	Asp	Ile	Leu	Lys	Phe	Leu	Gln	Ile
2885						2890					2895			
Asn	Gly	Tyr	Ala	Val	Ser	Arg	Gly	Phe	Lys	Asp	Leu	Glu	Leu	Asp
2900						2905					2910			
Thr	Pro	Ser	Ile	Glu	Lys	Arg	Phe	Ala	Tyr	Ser	Phe	Leu	Gln	Gln
2915						2920					2925			
Leu	Ile	Arg	Tyr	Val	Asp	Glu	Ala	His	Gln	Tyr	Ile	Leu	Glu	Phe
2930						2935					2940			
Asp	Gly	Gly	Ser	Arg	Ser	Lys	Gly	Glu	His	Phe	Pro	Tyr	Glu	Gln
2945						2950					2955			
Glu	Ile	Lys	Phe	Phe	Ala	Lys	Val	Val	Leu	Pro	Leu	Ile	Asp	Gln
2960						2965					2970			
Tyr	Phe	Lys	Asn	His	Arg	Leu	Tyr	Phe	Leu	Ser	Ala	Ala	Ser	Arg
2975						2980					2985			
Pro	Leu	Cys	Ser	Gly	Gly	His	Ala	Ser	Asn	Lys	Glu	Lys	Glu	Met
2990						2995					3000			

Val	Thr	Ser	Leu	Phe	Cys	Lys	Leu	Gly	Val	Leu	Val	Arg	His	Arg
3005						3010					3015			
Ile	Ser	Leu	Phe	Gly	Asn	Asp	Ala	Thr	Ser	Ile	Val	Asn	Cys	Leu
3020						3025					3030			
His	Ile	Leu	Gly	Gln	Thr	Leu	Asp	Ala	Arg	Thr	Val	Met	Lys	Thr
3035						3040					3045			
Gly	Leu	Glu	Ser	Val	Lys	Ser	Ala	Leu	Arg	Ala	Phe	Leu	Asp	Asn
3050						3055					3060			
Ala	Ala	Glu	Asp	Leu	Glu	Lys	Thr	Met	Glu	Asn	Leu	Lys	Gln	Gly
3065						3070					3075			
Gln	Phe	Thr	His	Thr	Arg	Asn	Gln	Pro	Arg	Gly	Val	Thr	Gln	Ile
3080						3085					3090			
Ile	Asn	Tyr	Thr	Thr	Val	Ala	Leu	Leu	Pro	Met	Leu	Ser	Ser	Leu
3095						3100					3105			
Phe	Glu	His	Ile	Gly	Gln	His	Gln	Phe	Gly	Glu	Asp	Leu	Ile	Leu
3110						3115					3120			
Glu	Asp	Val	Gln	Val	Ser	Cys	Tyr	Arg	Ile	Leu	Thr	Ser	Leu	Tyr
3125						3130					3135			
Ala	Leu	Gly	Thr	Ser	Lys	Ser	Ile	Tyr	Val	Glu	Arg	Gln	Arg	Ser
3140						3145					3150			
Ala	Leu	Gly	Glu	Cys	Leu	Ala	Ala	Phe	Ala	Gly	Ala	Phe	Pro	Val
3155						3160					3165			
Ala	Phe	Leu	Glu	Thr	His	Leu	Asn	Lys	His	Asn	Ile	Tyr	Ser	Ile
3170						3175					3180			
Tyr	Asn	Thr	Lys	Ser	Ser	Arg	Glu	Arg	Ala	Ala	Leu	Ser	Leu	Pro
3185						3190					3195			
Ala	Asn	Val	Glu	Asp	Val	Cys	Pro	Asn	Ile	Pro	Ser	Leu	Glu	Lys
3200						3205					3210			
Leu	Met	Glu	Glu	Ile	Val	Glu	Leu	Ala	Glu	Ser	Gly	Ile	Arg	Tyr
3215						3220					3225			
Thr	Gln	Met	Pro	His	Val	Met	Glu	Val	Ile	Leu	Pro	Met	Leu	Cys
3230						3235					3240			
Ser	Tyr	Met	Ser	Arg	Trp	Trp	Glu	His	Gly	Pro	Glu	Ser	Asn	Pro
3245						3250					3255			
Gly	Arg	Ala	Glu	Met	Cys	Cys	Thr	Ala	Leu	Asn	Ser	Glu	His	Met
3260						3265					3270			
Asn	Thr	Leu	Leu	Gly	Asn	Ile	Leu	Lys	Ile	Ile	Tyr	Asn	Asn	Leu
3275						3280					3285			
Gly	Ile	Asp	Glu	Gly	Ala	Trp	Met	Lys	Arg	Leu	Ala	Val	Phe	Ser
3290						3295					3300			

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Arg Met	Ala Pro Leu Tyr Asn	Leu Pro Arg His Arg	Ala Val Asn
3605	3610	3615	
Leu Phe	Leu Gln Gly Tyr Glu	Lys Ser Trp Ile Glu	Thr Glu Glu
3620	3625	3630	
His Tyr	Phe Glu Asp Lys Leu	Ile Glu Asp Leu Ala	Lys Pro Gly
3635	3640	3645	
Ala Glu	Pro Pro Glu Glu Asp	Glu Val Thr Lys Arg	Val Asp Pro
3650	3655	3660	
Leu His	Gln Leu Ile Leu Leu	Phe Ser Arg Thr Ala	Leu Thr Glu
3665	3670	3675	
Lys Cys	Lys Leu Glu Glu Asp	Phe Leu Tyr Met Ala	Tyr Ala Asp
3680	3685	3690	
Ile Met	Ala Lys Ser Cys His	Asp Glu Glu Asp Asp	Asp Gly Glu
3695	3700	3705	
Glu Glu	Val Lys Ser Phe Glu	Glu Lys Glu Met Glu	Lys Gln Lys
3710	3715	3720	
Leu Leu	Tyr Gln Gln Ala Arg	Leu His Asp Arg Gly	Ala Ala Glu
3725	3730	3735	
Met Val	Leu Gln Thr Ile Ser	Ala Ser Lys Gly Glu	Thr Gly Pro
3740	3745	3750	
Met Val	Ala Ala Thr Leu Lys	Leu Gly Ile Ala Ile	Leu Asn Gly
3755	3760	3765	
Gly Asn	Ser Thr Val Gln Gln	Lys Met Leu Asp Tyr	Leu Lys Glu
3770	3775	3780	
Lys Lys	Asp Val Gly Phe Phe	Gln Ser Leu Ala Gly	Leu Met Gln
3785	3790	3795	
Ser Cys	Ser Val Leu Asp Leu	Asn Ala Phe Glu Arg	Gln Asn Lys
3800	3805	3810	
Ala Glu	Gly Leu Gly Met Val	Thr Glu Glu Gly Ser	Gly Glu Lys
3815	3820	3825	
Val Leu	Gln Asp Asp Glu Phe	Thr Cys Asp Leu Phe	Arg Phe Leu
3830	3835	3840	
Gln Leu	Leu Cys Glu Gly His	Asn Ser Asp Phe Gln	Asn Tyr Leu
3845	3850	3855	
Arg Thr	Gln Thr Gly Asn Asn	Thr Thr Val Asn Ile	Ile Ile Ser
3860	3865	3870	
Thr Val	Asp Tyr Leu Leu Arg	Val Gln Glu Ser Ile	Ser Asp Phe
3875	3880	3885	
Tyr Trp	Tyr Tyr Ser Gly Lys	Asp Val Ile Asp Glu	Gln Gly Gln
3890	3895	3900	

Arg	Asn	Phe	Ser	Lys	Ala	Ile	Gln	Val	Ala	Lys	Gln	Val	Phe	Asn
3905						3910					3915			
Thr	Leu	Thr	Glu	Tyr	Ile	Gln	Gly	Pro	Cys	Thr	Gly	Asn	Gln	Gln
3920						3925					3930			
Ser	Leu	Ala	His	Ser	Arg	Leu	Trp	Asp	Ala	Val	Val	Gly	Phe	Leu
3935						3940					3945			
His	Val	Phe	Ala	His	Met	Gln	Met	Lys	Leu	Ser	Gln	Asp	Ser	Ser
3950						3955					3960			
Gln	Ile	Glu	Leu	Leu	Lys	Glu	Leu	Met	Asp	Leu	Gln	Lys	Asp	Met
3965						3970					3975			
Val	Val	Met	Leu	Leu	Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly
3980						3985					3990			
Thr	Ile	Gly	Lys	Gln	Met	Val	Asp	Met	Leu	Val	Glu	Ser	Ser	Asn
3995						4000					4005			
Asn	Val	Glu	Met	Ile	Leu	Lys	Phe	Phe	Asp	Met	Phe	Leu	Lys	Leu
4010						4015					4020			
Lys	Asp	Leu	Thr	Ser	Ser	Asp	Thr	Phe	Lys	Glu	Tyr	Asp	Pro	Asp
4025						4030					4035			
Gly	Lys	Gly	Ile	Ile	Ser	Lys	Arg	Asp	Phe	His	Lys	Ala	Met	Glu
4040						4045					4050			
Ser	His	Lys	His	Tyr	Thr	Gln	Ser	Glu	Thr	Glu	Phe	Leu	Leu	Ser
4055						4060					4065			
Cys	Ala	Glu	Thr	Asp	Glu	Asn	Glu	Thr	Leu	Asp	Tyr	Glu	Glu	Phe
4070						4075					4080			
Val	Lys	Arg	Phe	His	Glu	Pro	Ala	Lys	Asp	Ile	Gly	Phe	Asn	Val
4085						4090					4095			
Ala	Val	Leu	Leu	Thr	Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Thr
4100						4105					4110			
Arg	Leu	Gln	Thr	Phe	Leu	Glu	Leu	Ala	Glu	Ser	Val	Leu	Asn	Tyr
4115						4120					4125			
Phe	Gln	Pro	Phe	Leu	Gly	Arg	Ile	Glu	Ile	Met	Gly	Ser	Ala	Lys
4130						4135					4140			
Arg	Ile	Glu	Arg	Val	Tyr	Phe	Glu	Ile	Ser	Glu	Ser	Ser	Arg	Thr
4145						4150					4155			
Gln	Trp	Glu	Lys	Pro	Gln	Val	Lys	Glu	Ser	Lys	Arg	Gln	Phe	Ile
4160						4165					4170			
Phe	Asp	Val	Val	Asn	Glu	Gly	Gly	Glu	Lys	Glu	Lys	Met	Glu	Leu
4175						4180					4185			
Phe	Val	Asn	Phe	Cys	Glu	Asp	Thr	Ile	Phe	Glu	Met	Gln	Leu	Ala
4190						4195					4200			

Ala	Gln	Ile	Ser	Glu	Ser	Asp	Leu	Asn	Glu	Arg	Ser	Ala	Asn	Lys
4205						4210					4215			
Glu	Glu	Ser	Glu	Lys	Glu	Arg	Pro	Glu	Glu	Gln	Gly	Pro	Lys	Met
4220						4225					4230			
Gly	Phe	Phe	Ser	Val	Leu	Thr	Val	Arg	Ser	Ala	Leu	Phe	Ala	Leu
4235						4240					4245			
Arg	Tyr	Asn	Ile	Leu	Thr	Leu	Met	Arg	Met	Leu	Ser	Leu	Lys	Ser
4250						4255					4260			
Leu	Lys	Lys	Gln	Met	Lys	Lys	Met	Lys	Lys	Met	Thr	Val	Lys	Asp
4265						4270					4275			
Met	Val	Thr	Ala	Phe	Phe	Ser	Ser	Tyr	Trp	Ser	Ile	Phe	Met	Thr
4280						4285					4290			
Leu	Leu	His	Phe	Val	Ala	Ser	Val	Phe	Arg	Gly	Phe	Phe	Arg	Ile
4295						4300					4305			
Val	Cys	Ser	Leu	Leu	Leu	Gly	Gly	Ser	Leu	Val	Glu	Gly	Ala	Lys
4310						4315					4320			
Lys	Ile	Lys	Val	Ala	Glu	Leu	Leu	Ala	Asn	Met	Pro	Asp	Pro	Thr
4325						4330					4335			
Gln	Asp	Glu	Val	Arg	Gly	Asp	Gly	Glu	Glu	Gly	Glu	Arg	Lys	Pro
4340						4345					4350			
Met	Glu	Thr	Thr	Leu	Pro	Ser	Glu	Asp	Leu	Thr	Asp	Leu	Lys	Glu
4355						4360					4365			
Leu	Thr	Glu	Glu	Ser	Asp	Leu	Leu	Ser	Asp	Ile	Phe	Gly	Leu	Asp
4370						4375					4380			
Leu	Lys	Arg	Glu	Gly	Gly	Gln	Tyr	Lys	Leu	Ile	Pro	His	Asn	Pro
4385						4390					4395			
Asn	Ala	Gly	Leu	Ser	Asp	Leu	Met	Ser	Asn	Pro	Val	Leu	Ile	Pro
4400						4405					4410			
Glu	Glu	Gln	Glu	Lys	Phe	Gln	Glu	Gln	Lys	Thr	Lys	Glu	Glu	Glu
4415						4420					4425			
Lys	Glu	Glu	Lys	Glu	Glu	Thr	Lys	Ser	Glu	Pro	Glu	Lys	Ala	Glu
4430						4435					4440			
Gly	Glu	Asp	Gly	Glu	Lys	Glu	Glu	Lys	Val	Lys	Glu	Asp	Lys	Gly
4445						4450					4455			
Lys	Gln	Lys	Leu	Arg	Gln	Leu	His	Thr	His	Arg	Tyr	Gly	Glu	Pro
4460						4465					4470			
Glu	Val	Pro	Glu	Ser	Ala	Phe	Trp	Lys	Lys	Ile	Ile	Ala	Tyr	Gln
4475						4480					4485			
Gln	Lys	Leu	Leu	Asn	Tyr	Phe	Ala	Arg	Asn	Phe	Tyr	Asn	Met	Arg
4490						4495					4500			

Met	Leu	Ala	Leu	Phe	Val	Ala	Phe	Ala	Ile	Asn	Phe	Ile	Leu	Leu
4505						4510					4515			
Phe	Tyr	Lys	Val	Ser	Thr	Ser	Ser	Val	Val	Glu	Gly	Lys	Glu	Leu
4520						4525					4530			
Pro	Ser	Arg	Ser	Thr	Ser	Glu	Asn	Ala	Lys	Val	Thr	Thr	Ser	Leu
4535						4540					4545			
Asp	Ser	Ser	Ser	His	Arg	Ile	Ile	Ala	Val	His	Tyr	Val	Leu	Glu
4550						4555					4560			
Glu	Ser	Ser	Gly	Tyr	Met	Glu	Pro	Thr	Leu	Arg	Ile	Leu	Ala	Ile
4565						4570					4575			
Leu	His	Thr	Val	Ile	Ser	Phe	Phe	Cys	Ile	Ile	Gly	Tyr	Tyr	Cys
4580						4585					4590			
Leu	Lys	Val	Pro	Leu	Val	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Val	Ala
4595						4600					4605			
Arg	Lys	Leu	Glu	Phe	Asp	Gly	Leu	Tyr	Ile	Thr	Glu	Gln	Pro	Ser
4610						4615					4620			
Glu	Asp	Asp	Ile	Lys	Gly	Gln	Trp	Asp	Arg	Leu	Val	Ile	Asn	Thr
4625						4630					4635			
Gln	Ser	Phe	Pro	Asn	Asn	Tyr	Trp	Asp	Lys	Phe	Val	Lys	Arg	Lys
4640						4645					4650			
Val	Met	Asp	Lys	Tyr	Gly	Glu	Phe	Tyr	Gly	Arg	Asp	Arg	Ile	Ser
4655						4660					4665			
Glu	Leu	Leu	Gly	Met	Asp	Lys	Ala	Ala	Leu	Asp	Phe	Ser	Asp	Ala
4670						4675					4680			
Arg	Glu	Lys	Lys	Lys	Pro	Lys	Lys	Asp	Ser	Ser	Leu	Ser	Ala	Val
4685						4690					4695			
Leu	Asn	Ser	Ile	Asp	Val	Lys	Tyr	Gln	Met	Trp	Lys	Leu	Gly	Val
4700						4705					4710			
Val	Phe	Thr	Asp	Asn	Ser	Phe	Leu	Tyr	Leu	Ala	Trp	Tyr	Met	Thr
4715						4720					4725			
Met	Ser	Ile	Leu	Gly	His	Tyr	Asn	Asn	Phe	Phe	Phe	Ala	Ala	His
4730						4735					4740			
Leu	Leu	Asp	Ile	Ala	Met	Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile	Leu
4745						4750					4755			
Ser	Ser	Val	Thr	His	Asn	Gly	Lys	Gln	Leu	Val	Leu	Thr	Val	Gly
4760						4765					4770			
Leu	Leu	Ala	Val	Val	Val	Tyr	Leu	Tyr	Thr	Val	Val	Ala	Phe	Asn
4775						4780					4785			
Phe	Phe	Arg	Lys	Phe	Tyr	Asn	Lys	Ser	Glu	Asp	Gly	Asp	Thr	Pro
4790						4795					4800			

Asp Met Lys Cys Asp Asp Met Leu Thr Cys Tyr Met Phe His Met  
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 Tyr Val Gly Val Arg Ala Gly Gly Gly Ile Gly Asp Glu Ile Glu  
 4820 4825 4830  
 Asp Pro Ala Gly Asp Glu Tyr Glu Ile Tyr Arg Ile Ile Phe Asp  
 4835 4840 4845  
 Ile Thr Phe Phe Phe Phe Val Ile Val Ile Leu Leu Ala Ile Ile  
 4850 4855 4860  
 Gln Gly Leu Ile Ile Asp Ala Phe Gly Glu Leu Arg Asp Gln Gln  
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 Glu Gln Val Lys Glu Asp Met Glu Thr Lys Cys Phe Ile Cys Gly  
 4880 4885 4890  
 Ile Gly Asn Asp Tyr Phe Asp Thr Val Pro His Gly Phe Glu Thr  
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 His Thr Leu Gln Glu His Asn Leu Ala Asn Tyr Leu Phe Phe Leu  
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 Met Tyr Leu Ile Asn Lys Asp Glu Thr Glu His Thr Gly Gln Glu  
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 <212> PRT  
 <213> Homo sapiens

<400> 62  
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 Gln Lys Leu Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg Leu Cys Phe  
 35 40 45  
 Leu Glu Ser Thr Ser Asn Ser Lys Asn Val Pro Pro Asp Leu Ser Ile  
 50 55 60  
 Cys Thr Phe Val Leu Glu Gln Ser Leu Ser Val Arg Ala Leu Gln Glu  
 65 70 75 80  
 Met Leu Ala Asn Thr Val Glu Lys Ser Glu Gly Gln Val Asp Val Glu  
 85 90 95  
 Lys Trp Lys Phe Met Met Lys Thr Ala Gln Gly Gly Gly His Arg Thr  
 100 105 110

Leu Leu Tyr Gly His Ala Ile Leu Leu Arg His Ser Tyr Ser Gly Met  
 115 120 125  
 Tyr Leu Cys Cys Leu Ser Thr Ser Arg Ser Ser Thr Asp Lys Leu Ala  
 130 135 140  
 Phe Asp Val Gly Leu Gln Glu Asp Thr Thr Gly Glu Ala Cys Trp Trp  
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 Thr Ile His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg  
 165 170 175  
 Val Gly Asp Asp Leu Ile Leu Val Ser Val Ser Ser Glu Arg Tyr Leu  
 180 185 190  
 His Leu Ser Tyr Gly Asn Gly Ser Leu His Val Asp Ala Ala Phe Gln  
 195 200 205  
 Gln Thr Leu Trp Ser Val Ala Pro Ile Ser Ser Gly Ser Glu Ala Ala  
 210 215 220  
 Gln Gly Tyr Leu Ile Gly Gly Asp Val Leu Arg Leu Leu His Gly His  
 225 230 235 240  
 Met Asp Glu Cys Leu Thr Val Pro Ser Gly Glu His Gly Glu Glu Gln  
 245 250 255  
 Arg Arg Thr Val His Tyr Glu Gly Gly Ala Val Ser Val His Ala Arg  
 260 265 270  
 Ser Leu Trp Arg Leu Glu Thr Leu Arg Val Ala Trp Ser Gly Ser His  
 275 280 285  
 Ile Arg Trp Gly Gln Pro Phe Arg Leu Arg His Val Thr Thr Gly Lys  
 290 295 300  
 Tyr Leu Ser Leu Met Glu Asp Lys Asn Leu Leu Leu Met Asp Lys Glu  
 305 310 315 320  
 Lys Ala Asp Val Lys Ser Thr Ala Phe Thr Phe Arg Ser Ser Lys Glu  
 325 330 335  
 Lys Leu Asp Val Gly Val Arg Lys Glu Val Asp Gly Met Gly Thr Ser  
 340 345 350  
 Glu Ile Lys Tyr Gly Asp Ser Val Cys Tyr Ile Gln His Val Asp Thr  
 355 360 365  
 Gly Leu Trp Leu Thr Tyr Gln Ser Val Asp Val Lys Ser Val Arg Met  
 370 375 380  
 Gly Ser Ile Gln Arg Lys Ala Ile Met His His Glu Gly His Met Asp  
 385 390 395 400  
 Asp Gly Ile Ser Leu Ser Arg Ser Gln His Glu Glu Ser Arg Thr Ala  
 405 410 415  
 Arg Val Ile Arg Ser Thr Val Phe Leu Phe Asn Arg Phe Ile Arg Gly  
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Leu Asp Ala Leu Ser Lys Lys Ala Lys Ala Ser Thr Val Asp Leu Pro  
 435 440 445  
 Ile Glu Ser Val Ser Leu Ser Leu Gln Asp Leu Ile Gly Tyr Phe His  
 450 455 460  
 Pro Pro Asp Glu His Leu Glu His Glu Asp Lys Gln Asn Arg Leu Arg  
 465 470 475 480  
 Ala Leu Lys Asn Arg Gln Asn Leu Phe Gln Glu Glu Gly Met Ile Asn  
 485 490 495  
 Leu Val Leu Glu Cys Ile Asp Arg Leu His Val Tyr Ser Ser Ala Ala  
 500 505 510  
 His Phe Ala Asp Val Ala Gly Arg Glu Ala Gly Glu Ser Trp Lys Ser  
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 Arg Leu Glu Arg Leu Glu Ala Ser Ser Gly Ile Leu Glu Val Leu His  
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 Cys Val Leu Val Glu Ser Pro Glu Ala Leu Asn Ile Ile Lys Glu Gly  
 580 585 590  
 His Ile Lys Ser Ile Ile Ser Leu Leu Asp Lys His Gly Arg Asn His  
 595 600 605  
 Lys Val Leu Asp Val Leu Cys Ser Leu Cys Val Cys His Gly Val Ala  
 610 615 620  
 Val Arg Ser Asn Gln His Leu Ile Cys Asp Asn Leu Leu Pro Gly Arg  
 625 630 635 640  
 Asp Leu Leu Leu Gln Thr Arg Leu Val Asn His Val Ser Ser Met Arg  
 645 650 655  
 Pro Asn Ile Phe Leu Gly Val Ser Glu Gly Ser Ala Gln Tyr Lys Lys  
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 Trp Tyr Tyr Glu Leu Met Val Asp His Thr Glu Pro Phe Val Thr Ala  
 675 680 685  
 Glu Ala Thr His Leu Arg Val Gly Trp Ala Ser Thr Glu Gly Tyr Ser  
 690 695 700  
 Pro Tyr Pro Gly Gly Gly Glu Glu Trp Gly Gly Asn Gly Val Gly Asp  
 705 710 715 720  
 Asp Leu Phe Ser Tyr Gly Phe Asp Gly Leu His Leu Trp Ser Gly Cys  
 725 730 735  
 Ile Ala Arg Thr Val Ser Ser Pro Asn Gln His Leu Leu Arg Thr Asp  
 740 745 750

Asp Val Ile Ser Cys Cys Leu Asp Leu Ser Ala Pro Ser Ile Ser Phe  
 755 760 765  
 Arg Ile Asn Gly Gln Pro Val Gln Gly Met Phe Glu Asn Phe Asn Ile  
 770 775 780  
 Asp Gly Leu Phe Phe Pro Val Val Ser Phe Ser Ala Gly Ile Lys Val  
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 Arg Phe Leu Leu Gly Gly Arg His Gly Glu Phe Lys Phe Leu Pro Pro  
 805 810 815  
 Pro Gly Tyr Ala Pro Cys Tyr Glu Ala Val Leu Pro Lys Glu Lys Leu  
 820 825 830  
 Lys Val Glu His Ser Arg Glu Tyr Lys Gln Glu Arg Thr Tyr Thr Arg  
 835 840 845  
 Asp Leu Leu Gly Pro Thr Val Ser Leu Thr Gln Ala Ala Phe Thr Pro  
 850 855 860  
 Ile Pro Val Asp Thr Ser Gln Ile Val Leu Pro Pro His Leu Glu Arg  
 865 870 875 880  
 Ile Arg Glu Lys Leu Ala Glu Asn Ile His Glu Leu Trp Val Met Asn  
 885 890 895  
 Lys Ile Glu Leu Gly Trp Gln Tyr Gly Pro Val Arg Asp Asp Asn Lys  
 900 905 910  
 Arg Gln His Pro Cys Leu Val Glu Phe Ser Lys Leu Pro Glu Gln Glu  
 915 920 925  
 Arg Asn Tyr Asn Leu Gln Met Ser Leu Glu Thr Leu Lys Thr Leu Leu  
 930 935 940  
 Ala Leu Gly Cys His Val Gly Ile Ser Asp Glu His Ala Glu Asp Lys  
 945 950 955 960  
 Val Lys Lys Met Lys Leu Pro Lys Asn Tyr Gln Leu Thr Ser Gly Tyr  
 965 970 975  
 Lys Pro Ala Pro Met Asp Leu Ser Phe Ile Lys Leu Thr Pro Ser Gln  
 980 985 990  
 Glu Ala Met Val Asp Lys Leu Ala Glu Asn Ala His Asn Val Trp Ala  
 995 1000 1005  
 Arg Asp Arg Ile Arg Gln Gly Trp Thr Tyr Gly Ile Gln Gln Asp  
 1010 1015 1020  
 Val Lys Asn Arg Arg Asn Pro Arg Leu Val Pro Tyr Thr Pro Leu  
 1025 1030 1035  
 Asp Asp Arg Thr Lys Lys Ser Asn Lys Asp Ser Leu Arg Glu Ala  
 1040 1045 1050  
 Val Arg Thr Leu Leu Gly Tyr Gly Tyr Asn Leu Glu Ala Pro Asp  
 1055 1060 1065



Gln Asp	His Ala Ala Arg	Ala	Glu Val Cys Ser	Gly	Thr Gly Glu
1070		1075		1080	
Arg Phe	Arg Ile Phe Arg	Ala	Glu Lys Thr Tyr	Ala	Val Lys Ala
1085		1090		1095	
Gly Arg	Trp Tyr Phe Glu	Phe	Glu Thr Val Thr	Ala	Gly Asp Met
1100		1105		1110	
Arg Val	Gly Trp Ser Arg	Pro	Gly Cys Gln Pro	Asp	Gln Glu Leu
1115		1120		1125	
Gly Ser	Asp Glu Arg Ala	Phe	Ala Phe Asp Gly	Phe	Lys Ala Gln
1130		1135		1140	
Arg Trp	His Gln Gly Asn	Glu	His Tyr Gly Arg	Ser	Trp Gln Ala
1145		1150		1155	
Gly Asp	Val Val Gly Cys	Met	Val Asp Met Asn	Glu	His Thr Met
1160		1165		1170	
Met Phe	Thr Leu Asn Gly	Glu	Ile Leu Leu Asp	Asp	Ser Gly Ser
1175		1180		1185	
Glu Leu	Ala Phe Lys Asp	Phe	Asp Val Gly Asp	Gly	Phe Ile Pro
1190		1195		1200	
Val Cys	Ser Leu Gly Val	Ala	Gln Val Gly Arg	Met	Asn Phe Gly
1205		1210		1215	
Lys Asp	Val Ser Thr Leu	Lys	Tyr Phe Thr Ile	Cys	Gly Leu Gln
1220		1225		1230	
Glu Gly	Tyr Glu Pro Phe	Ala	Val Asn Thr Asn	Arg	Asp Ile Thr
1235		1240		1245	
Met Trp	Leu Ser Lys Arg	Leu	Pro Gln Phe Leu	Gln	Val Pro Ser
1250		1255		1260	
Asn His	Glu His Ile Glu	Val	Thr Arg Ile Asp	Gly	Thr Ile Asp
1265		1270		1275	
Ser Ser	Pro Cys Leu Lys	Val	Thr Gln Lys Ser	Phe	Gly Ser Gln
1280		1285		1290	
Asn Ser	Asn Thr Asp Ile	Met	Phe Tyr Arg Leu	Ser	Met Pro Ile
1295		1300		1305	
Glu Cys	Ala Glu Val Phe	Ser	Lys Thr Val Ala	Gly	Gly Leu Pro
1310		1315		1320	
Gly Ala	Gly Leu Phe Gly	Pro	Lys Asn Asp Leu	Glu	Asp Tyr Asp
1325		1330		1335	
Ala Asp	Ser Asp Phe Glu	Val	Leu Met Lys Thr	Ala	His Gly His
1340		1345		1350	
Leu Val	Pro Asp Arg Val	Asp	Lys Asp Lys Glu	Ala	Thr Lys Pro
1355		1360		1365	

Glu Phe	Asn Asn His Lys	Asp	Tyr Ala Gln Glu Lys	Pro Ser Arg
1370		1375		1380
Leu Lys	Gln Arg Phe Leu Leu	Arg Arg Thr Lys	Pro	Asp Tyr Ser
1385		1390		1395
Thr Ser	His Ser Ala Arg	Leu	Thr Glu Asp Val	Leu Ala Asp Asp
1400		1405		1410
Arg Asp	Asp Tyr Asp Phe	Leu	Met Gln Thr Ser	Thr Tyr Tyr Tyr
1415		1420		1425
Ser Val	Arg Ile Phe Pro	Gly	Gln Glu Pro Ala	Asn Val Trp Val
1430		1435		1440
Gly Trp	Ile Thr Ser Asp	Phe	His Gln Tyr Asp	Thr Gly Phe Asp
1445		1450		1455
Leu Asp	Arg Val Arg Thr	Val	Thr Val Thr Leu	Gly Asp Glu Lys
1460		1465		1470
Gly Lys	Val His Glu Ser	Ile	Lys Arg Ser Asn	Cys Tyr Met Val
1475		1480		1485
Cys Ala	Gly Glu Ser Met	Ser	Pro Gly Gln Gly	Arg Asn Asn Asn
1490		1495		1500
Gly Leu	Glu Ile Gly Cys	Val	Val Asp Ala Ala	Ser Gly Leu Leu
1505		1510		1515
Thr Phe	Ile Ala Asn Gly	Lys	Glu Leu Ser Thr	Tyr Tyr Gln Val
1520		1525		1530
Glu Pro	Ser Thr Lys Leu	Phe	Pro Ala Val Phe	Ala Gln Ala Thr
1535		1540		1545
Ser Pro	Asn Val Phe Gln	Phe	Glu Leu Gly Arg	Ile Lys Asn Val
1550		1555		1560
Met Pro	Leu Ser Ala Gly	Leu	Phe Lys Ser Glu	His Lys Asn Pro
1565		1570		1575
Val Pro	Gln Cys Pro Pro	Arg	Leu His Val Gln	Phe Leu Ser His
1580		1585		1590
Val Leu	Trp Ser Arg Met	Pro	Asn Gln Phe Leu	Lys Val Asp Val
1595		1600		1605
Ser Arg	Ile Ser Glu Arg	Gln	Gly Trp Leu Val	Gln Cys Leu Asp
1610		1615		1620
Pro Leu	Gln Phe Met Ser	Leu	His Ile Pro Glu	Glu Asn Arg Ser
1625		1630		1635
Val Asp	Ile Leu Glu Leu	Thr	Glu Gln Glu Glu	Leu Leu Lys Phe
1640		1645		1650
His Tyr	His Thr Leu Arg	Leu	Tyr Ser Ala Val	Cys Ala Leu Gly
1655		1660		1665

Asn	His	Arg	Val	Ala	His	Ala	Leu	Cys	Ser	His	Val	Asp	Glu	Pro
1670						1675					1680			
Gln	Leu	Leu	Tyr	Ala	Ile	Glu	Asn	Lys	Tyr	Met	Pro	Gly	Leu	Leu
1685						1690					1695			
Arg	Ala	Gly	Tyr	Tyr	Asp	Leu	Leu	Ile	Asp	Ile	His	Leu	Ser	Ser
1700						1705					1710			
Tyr	Ala	Thr	Ala	Arg	Leu	Met	Met	Asn	Asn	Glu	Tyr	Ile	Val	Pro
1715						1720					1725			
Met	Thr	Glu	Glu	Thr	Lys	Ser	Ile	Thr	Leu	Phe	Pro	Asp	Glu	Asn
1730						1735					1740			
Lys	Lys	His	Gly	Leu	Pro	Gly	Ile	Gly	Leu	Ser	Thr	Ser	Leu	Arg
1745						1750					1755			
Pro	Arg	Met	Gln	Phe	Ser	Ser	Pro	Ser	Phe	Val	Ser	Ile	Ser	Asn
1760						1765					1770			
Glu	Cys	Tyr	Gln	Tyr	Ser	Pro	Glu	Phe	Pro	Leu	Asp	Ile	Leu	Lys
1775						1780					1785			
Ser	Lys	Thr	Ile	Gln	Met	Leu	Thr	Glu	Ala	Val	Lys	Glu	Gly	Ser
1790						1795					1800			
Leu	His	Ala	Arg	Asp	Pro	Val	Gly	Gly	Thr	Thr	Glu	Phe	Leu	Phe
1805						1810					1815			
Val	Pro	Leu	Ile	Lys	Leu	Phe	Tyr	Thr	Leu	Leu	Ile	Met	Gly	Ile
1820						1825					1830			
Phe	His	Asn	Glu	Asp	Leu	Lys	His	Ile	Leu	Gln	Leu	Ile	Glu	Pro
1835						1840					1845			
Ser	Val	Phe	Lys	Glu	Ala	Ala	Thr	Pro	Glu	Glu	Glu	Ser	Asp	Thr
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Leu	Glu	Lys	Glu	Leu	Ser	Val	Asp	Asp	Ala	Lys	Leu	Gln	Gly	Ala
1865						1870					1875			
Gly	Glu	Glu	Glu	Ala	Lys	Gly	Gly	Lys	Arg	Pro	Lys	Glu	Gly	Leu
1880						1885					1890			
Leu	Gln	Met	Lys	Leu	Pro	Glu	Pro	Val	Lys	Leu	Gln	Met	Cys	Leu
1895						1900					1905			
Leu	Leu	Gln	Tyr	Leu	Cys	Asp	Cys	Gln	Val	Arg	His	Arg	Ile	Glu
1910						1915					1920			
Ala	Ile	Val	Ala	Phe	Ser	Asp	Asp	Phe	Val	Ala	Lys	Leu	Gln	Asp
1925						1930					1935			
Asn	Gln	Arg	Phe	Arg	Tyr	Asn	Glu	Val	Met	Gln	Ala	Leu	Asn	Met
1940						1945					1950			
Ser	Ala	Ala	Leu	Thr	Ala	Arg	Lys	Thr	Lys	Glu	Phe	Arg	Ser	Pro
1955						1960					1965			

Pro	Gln	Glu	Gln	Ile	Asn	Met	Leu	Leu	Asn	Phe	Lys	Asp	Asp	Lys
1970						1975					1980			
Ser	Glu	Cys	Pro	Cys	Pro	Glu	Glu	Ile	Arg	Asp	Gln	Leu	Leu	Asp
1985						1990					1995			
Phe	His	Glu	Asp	Leu	Met	Thr	His	Cys	Gly	Ile	Glu	Leu	Asp	Glu
2000						2005					2010			
Asp	Gly	Ser	Leu	Asp	Gly	Asn	Ser	Asp	Leu	Thr	Ile	Arg	Gly	Arg
2015						2020					2025			
Leu	Leu	Ser	Leu	Val	Glu	Lys	Val	Thr	Tyr	Leu	Lys	Lys	Lys	Gln
2030						2035					2040			
Ala	Glu	Lys	Pro	Val	Glu	Ser	Asp	Ser	Lys	Lys	Ser	Ser	Thr	Leu
2045						2050					2055			
Gln	Gln	Leu	Ile	Ser	Glu	Thr	Met	Val	Arg	Trp	Ala	Gln	Glu	Ser
2060						2065					2070			
Val	Ile	Glu	Asp	Pro	Glu	Leu	Val	Arg	Ala	Met	Phe	Val	Leu	Leu
2075						2080					2085			
His	Arg	Gln	Tyr	Asp	Gly	Ile	Gly	Gly	Leu	Val	Arg	Ala	Leu	Pro
2090						2095					2100			
Lys	Thr	Tyr	Thr	Ile	Asn	Gly	Val	Ser	Val	Glu	Asp	Thr	Ile	Asn
2105						2110					2115			
Leu	Leu	Ala	Ser	Leu	Gly	Gln	Ile	Arg	Ser	Leu	Leu	Ser	Val	Arg
2120						2125					2130			
Met	Gly	Lys	Glu	Glu	Glu	Lys	Leu	Met	Ile	Arg	Gly	Leu	Gly	Asp
2135						2140					2145			
Ile	Met	Asn	Asn	Lys	Val	Phe	Tyr	Gln	His	Pro	Asn	Leu	Met	Arg
2150						2155					2160			
Ala	Leu	Gly	Met	His	Glu	Thr	Val	Met	Glu	Val	Met	Val	Asn	Val
2165						2170					2175			
Leu	Gly	Gly	Gly	Glu	Ser	Lys	Glu	Ile	Thr	Phe	Pro	Lys	Met	Val
2180						2185					2190			
Ala	Asn	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Ile	Ser	Arg
2195						2200					2205			
Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Leu	Ser	Tyr	Leu	Leu	Glu
2210						2215					2220			
Asn	Ser	Ser	Val	Gly	Leu	Ala	Ser	Pro	Ala	Met	Arg	Gly	Ser	Thr
2225						2230					2235			
Pro	Leu	Asp	Val	Ala	Ala	Ala	Ser	Val	Met	Asp	Asn	Asn	Glu	Leu
2240						2245					2250			
Ala	Leu	Ala	Leu	Arg	Glu	Pro	Asp	Leu	Glu	Lys	Val	Val	Arg	Tyr
2255						2260					2265			

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2270						2275					2280			
Gly	Tyr	Pro	Asp	Ile	Gly	Trp	Asn	Pro	Val	Glu	Gly	Glu	Arg	Tyr
2285						2290					2295			
Leu	Asp	Phe	Leu	Arg	Phe	Ala	Val	Phe	Cys	Asn	Gly	Glu	Ser	Val
2300						2305					2310			
Glu	Glu	Asn	Ala	Asn	Val	Val	Val	Arg	Leu	Leu	Ile	Arg	Arg	Pro
2315						2320					2325			
Glu	Cys	Phe	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Gly	Asn	Gly	Leu
2330						2335					2340			
Leu	Ala	Ala	Met	Glu	Glu	Ala	Ile	Lys	Ile	Ala	Glu	Asp	Pro	Ser
2345						2350					2355			
Arg	Asp	Gly	Pro	Ser	Pro	Asn	Ser	Gly	Ser	Ser	Lys	Thr	Leu	Asp
2360						2365					2370			
Thr	Glu	Glu	Glu	Glu	Asp	Asp	Thr	Ile	His	Met	Gly	Asn	Ala	Ile
2375						2380					2385			
Met	Thr	Phe	Tyr	Ser	Ala	Leu	Ile	Asp	Leu	Leu	Gly	Arg	Cys	Ala
2390						2395					2400			
Pro	Glu	Met	His	Leu	Ile	His	Ala	Gly	Lys	Gly	Glu	Ala	Ile	Arg
2405						2410					2415			
Ile	Arg	Ser	Ile	Leu	Arg	Ser	Leu	Ile	Pro	Leu	Gly	Asp	Leu	Val
2420						2425					2430			
Gly	Val	Ile	Ser	Ile	Ala	Phe	Gln	Met	Pro	Thr	Ile	Ala	Lys	Asp
2435						2440					2445			
Gly	Asn	Val	Val	Glu	Pro	Asp	Met	Ser	Ala	Gly	Phe	Cys	Pro	Asp
2450						2455					2460			
His	Lys	Ala	Ala	Met	Val	Leu	Phe	Leu	Asp	Arg	Val	Tyr	Gly	Ile
2465						2470					2475			
Glu	Val	Gln	Asp	Phe	Leu	Leu	His	Leu	Leu	Glu	Val	Gly	Phe	Leu
2480						2485					2490			
Pro	Asp	Leu	Arg	Ala	Ala	Ala	Ser	Leu	Asp	Thr	Ala	Ala	Leu	Ser
2495						2500					2505			
Ala	Thr	Asp	Met	Ala	Leu	Ala	Leu	Asn	Arg	Tyr	Leu	Cys	Thr	Ala
2510						2515					2520			
Val	Leu	Pro	Leu	Leu	Thr	Arg	Cys	Ala	Pro	Leu	Phe	Ala	Gly	Thr
2525						2530					2535			
Glu	His	His	Ala	Ser	Leu	Ile	Asp	Ser	Leu	Leu	His	Thr	Val	Tyr
2540						2545					2550			
Arg	Leu	Ser	Lys	Gly	Cys	Ser	Leu	Thr	Lys	Ala	Gln	Arg	Asp	Ser
2555						2560					2565			

Ile	Glu	Val	Cys	Leu	Leu	Ser	Ile	Cys	Gly	Gln	Leu	Arg	Pro	Ser
2570						2575					2580			
Met	Met	Gln	His	Leu	Leu	Arg	Arg	Leu	Val	Phe	Asp	Val	Pro	Leu
2585						2590					2595			
Leu	Asn	Glu	His	Ala	Lys	Met	Pro	Leu	Lys	Leu	Leu	Thr	Asn	His
2600						2605					2610			
Tyr	Glu	Arg	Cys	Trp	Lys	Tyr	Tyr	Cys	Leu	Pro	Gly	Gly	Trp	Gly
2615						2620					2625			
Asn	Phe	Gly	Ala	Ala	Ser	Glu	Glu	Glu	Leu	His	Leu	Ser	Arg	Lys
2630						2635					2640			
Leu	Phe	Trp	Gly	Ile	Phe	Asp	Ala	Leu	Ser	Gln	Lys	Lys	Tyr	Glu
2645						2650					2655			
Gln	Glu	Leu	Phe	Lys	Leu	Ala	Leu	Pro	Cys	Leu	Ser	Ala	Val	Ala
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Gly	Ala	Leu	Pro	Pro	Asp	Tyr	Met	Glu	Ser	Asn	Tyr	Val	Ser	Met
2675						2680					2685			
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2690						2695					2700			
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2705						2710					2715			
Tyr	Phe	Ile	Asn	Lys	Tyr	Ala	Glu	His	Ser	His	Asp	Lys	Trp	Ser
2720						2725					2730			
Met	Asp	Lys	Leu	Ala	Asn	Gly	Trp	Ile	Tyr	Gly	Glu	Ile	Tyr	Ser
2735						2740					2745			
Asp	Ser	Ser	Lys	Val	Gln	Pro	Leu	Met	Lys	Pro	Tyr	Lys	Leu	Leu
2750						2755					2760			
Ser	Glu	Lys	Glu	Lys	Glu	Ile	Tyr	Arg	Trp	Pro	Ile	Lys	Glu	Ser
2765						2770					2775			
Leu	Lys	Thr	Met	Leu	Ala	Arg	Thr	Met	Arg	Thr	Glu	Arg	Thr	Arg
2780						2785					2790			
Glu	Gly	Asp	Ser	Met	Ala	Leu	Tyr	Asn	Arg	Thr	Arg	Arg	Ile	Ser
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Arg	Ala	Ile	Asp	Met	Ser	Asn	Val	Thr	Leu	Ser	Arg	Asp	Leu	His
2825						2830					2835			
Ala	Met	Ala	Glu	Met	Met	Ala	Glu	Asn	Tyr	His	Asn	Ile	Trp	Ala
2840						2845					2850			
Lys	Lys	Lys	Lys	Met	Glu	Leu	Glu	Ser	Lys	Gly	Gly	Gly	Asn	His
2855						2860					2865			

Pro	Leu	Leu	Val	Pro	Tyr	Asp	Thr	Leu	Thr	Ala	Lys	Glu	Lys	Ala
2870						2875					2880			
Lys	Asp	Arg	Glu	Lys	Ala	Gln	Asp	Ile	Leu	Lys	Phe	Leu	Gln	Ile
2885						2890					2895			
Asn	Gly	Tyr	Ala	Val	Ser	Arg	Gly	Phe	Lys	Asp	Leu	Glu	Leu	Asp
2900						2905					2910			
Thr	Pro	Ser	Ile	Glu	Lys	Arg	Phe	Ala	Tyr	Ser	Phe	Leu	Gln	Gln
2915						2920					2925			
Leu	Ile	Arg	Tyr	Val	Asp	Glu	Ala	His	Gln	Tyr	Ile	Leu	Glu	Phe
2930						2935					2940			
Asp	Gly	Gly	Ser	Arg	Gly	Lys	Gly	Glu	His	Phe	Pro	Tyr	Glu	Gln
2945						2950					2955			
Glu	Ile	Lys	Phe	Phe	Ala	Lys	Val	Val	Leu	Pro	Leu	Ile	Asp	Gln
2960						2965					2970			
Tyr	Phe	Lys	Asn	His	Arg	Leu	Tyr	Phe	Leu	Ser	Ala	Ala	Ser	Arg
2975						2980					2985			
Pro	Leu	Cys	Ser	Gly	Gly	His	Ala	Ser	Asn	Lys	Glu	Lys	Glu	Met
2990						2995					3000			
Val	Thr	Ser	Leu	Phe	Cys	Lys	Leu	Gly	Val	Leu	Val	Arg	His	Arg
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3020						3025					3030			
His	Ile	Leu	Gly	Gln	Thr	Leu	Asp	Ala	Arg	Thr	Val	Met	Lys	Thr
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Gln	Phe	Thr	His	Thr	Arg	Asn	Gln	Pro	Lys	Gly	Val	Thr	Gln	Ile
3080						3085					3090			
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3455						3460					3465			



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Gly Asp	Gln Glu	Leu Ile	Ala	Leu Ala	Lys Asn	Arg	Phe Ser	Leu
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Lys Asp	Thr Glu	Asp Glu	Val	Arg Asp	Ile Ile	Arg	Ser Asn	Ile
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His Leu	Gln Gly	Lys Leu	Glu	Asp Pro	Ala Ile	Arg	Trp Gln	Met
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Ala Leu	Tyr Lys	Asp Leu	Pro	Asn Arg	Thr Asp	Asp	Thr Ser	Asp
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Pro Glu	Lys Thr	Val Glu	Arg	Val Leu	Asp Ile	Ala	Asn Val	Leu
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Phe His	Leu Glu	Gln Lys	Ser	Lys Arg	Val Gly	Arg	Arg His	Tyr
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Cys Leu	Val Glu	His Pro	Gln	Arg Ser	Lys Lys	Ala	Val Trp	His
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Lys Leu	Leu Ser	Lys Gln	Arg	Lys Arg	Ala Val	Val	Ala Cys	Phe
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Arg Met	Ala Pro	Leu Tyr	Asn	Leu Pro	Arg His	Arg	Ala Val	Asn
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His Tyr	Phe Glu	Asp Lys	Leu	Ile Glu	Asp Leu	Ala	Lys Pro	Gly
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Ala Glu	Pro Pro	Glu Glu	Asp	Glu Gly	Thr Lys	Arg	Val Asp	Pro
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Leu His	Gln Leu	Ile Leu	Leu	Phe Ser	Arg Thr	Ala	Leu Thr	Glu
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Lys Cys	Lys Leu	Glu Glu	Asp	Phe Leu	Tyr Met	Ala	Tyr Ala	Asp
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Ile Met	Ala Lys	Ser Cys	His	Asp Glu	Glu Asp	Asp	Asp Gly	Glu
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Glu Glu	Val Lys	Ser Phe	Glu	Glu Lys	Glu Met	Glu	Lys Gln	Lys
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Leu Leu	Tyr Gln	Gln Ala	Arg	Leu His	Asp Arg	Gly	Ala Ala	Glu
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Met Val	Leu Gln	Thr Ile	Ser	Ala Ser	Lys Gly	Glu	Thr Gly	Pro
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Met Val	Ala Ala	Thr Leu	Lys	Leu Gly	Ile Ala	Ile	Leu Asn	Gly
3755			3760			3765		

Gly	Asn	Ser	Thr	Val	Gln	Gln	Lys	Met	Leu	Asp	Tyr	Leu	Lys	Glu
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Lys	Lys	Asp	Val	Gly	Phe	Phe	Gln	Ser	Leu	Ala	Gly	Leu	Met	Gln
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Ser	Cys	Ser	Val	Leu	Asp	Leu	Asn	Ala	Phe	Glu	Arg	Gln	Asn	Lys
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3995						4000					4005			
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Cys	Ala	Glu	Thr	Asp	Glu	Asn	Glu	Thr	Leu	Asp	Tyr	Glu	Glu	Phe
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4280						4285					4290			
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Gln	Asp	Glu	Val	Arg	Gly	Asp	Gly	Glu	Glu	Gly	Glu	Arg	Lys	Pro
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4355						4360					4365			

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Leu Lys 4385	Arg Glu Gly Gly	Gln 4390	Tyr Lys Leu Ile	Pro 4395	His Asn Pro
Asn Ala 4400	Gly Leu Ser Asp	Leu 4405	Met Ser Asn Pro	Val 4410	Pro Met Pro
Glu Val 4415	Gln Glu Lys Phe	Gln 4420	Glu Gln Lys Ala	Lys 4425	Glu Glu Glu
Lys Glu 4430	Glu Lys Glu Glu	Thr 4435	Lys Ser Glu Pro	Glu 4440	Lys Ala Glu
Gly Glu 4445	Asp Gly Glu Lys	Glu 4450	Glu Lys Ala Lys	Glu 4455	Asp Lys Gly
Lys Gln 4460	Lys Leu Arg Gln	Leu 4465	His Thr His Arg	Tyr 4470	Gly Glu Pro
Glu Val 4475	Pro Glu Ser Ala	Phe 4480	Trp Lys Lys Ile	Ile 4485	Ala Tyr Gln
Gln Lys 4490	Leu Leu Asn Tyr	Phe 4495	Ala Arg Asn Phe	Tyr 4500	Asn Met Arg
Met Leu 4505	Ala Leu Phe Val	Ala 4510	Phe Ala Ile Asn	Phe 4515	Ile Leu Leu
Phe Tyr 4520	Lys Val Ser Thr	Ser 4525	Ser Val Val Glu	Gly 4530	Lys Glu Leu
Pro Thr 4535	Arg Ser Ser Ser	Glu 4540	Asn Ala Lys Val	Thr 4545	Ser Leu Asp
Ser Ser 4550	Ser His Arg Ile	Ile 4555	Ala Val His Tyr	Val 4560	Leu Glu Glu
Ser Ser 4565	Gly Tyr Met Glu	Pro 4570	Thr Leu Arg Ile	Leu 4575	Ala Ile Leu
His Thr 4580	Val Ile Ser Phe	Phe 4585	Cys Ile Ile Gly	Tyr 4590	Tyr Cys Leu
Lys Val 4595	Pro Leu Val Ile	Phe 4600	Lys Arg Glu Lys	Glu 4605	Val Ala Arg
Lys Leu 4610	Glu Phe Asp Gly	Leu 4615	Tyr Ile Thr Glu	Gln 4620	Pro Ser Glu
Asp Asp 4625	Ile Lys Gly Gln	Trp 4630	Asp Arg Leu Val	Ile 4635	Asn Thr Gln
Ser Phe 4640	Pro Asn Asn Tyr	Trp 4645	Asp Lys Phe Val	Lys 4650	Arg Lys Val
Met Asp 4655	Lys Tyr Gly Glu	Phe 4660	Tyr Gly Arg Asp	Arg 4665	Ile Ser Glu

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Glu	Lys	Lys	Lys	Pro	Lys	Lys	Asp	Ser	Ser	Leu	Ser	Ala	Val	Leu
4685						4690					4695			
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Ser	Val	Leu	Gly	His	Tyr	Asn	Asn	Phe	Phe	Phe	Ala	Ala	His	Leu
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Leu	Asp	Ile	Ala	Met	Gly	Phe	Lys	Thr	Leu	Arg	Thr	Ile	Leu	Ser
4745						4750					4755			
Ser	Val	Thr	His	Asn	Gly	Lys	Gln	Leu	Val	Leu	Thr	Val	Gly	Leu
4760						4765					4770			
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4775						4780					4785			
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4790						4795					4800			
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Pro	Ala	Gly	Asp	Glu	Tyr	Glu	Ile	Tyr	Arg	Ile	Ile	Phe	Asp	Ile
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Thr	Phe	Phe	Phe	Phe	Val	Ile	Val	Ile	Leu	Leu	Ala	Ile	Ile	Gln
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Gln	Val	Lys	Glu	Asp	Met	Glu	Thr	Lys	Cys	Phe	Ile	Cys	Gly	Ile
4880						4885					4890			
Gly	Asn	Asp	Tyr	Phe	Asp	Thr	Val	Pro	His	Gly	Phe	Glu	Thr	His
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Thr	Leu	Gln	Glu	His	Asn	Leu	Ala	Asn	Tyr	Leu	Phe	Phe	Leu	Met
4910						4915					4920			
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4925						4930					4935			
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4940						4945					4950			
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 Pro Asp Leu Ser Xaa Cys Val Phe Val Ile Glu Gln Ala Leu Ser Val  
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 Val Leu Arg Phe Phe His Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser  
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Gly Asp

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&lt;211&gt; 29

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Lys Gln Ala Xaa Leu His Glu Glu Gly Lys Met Asp Asp  
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&lt;211&gt; 22

&lt;212&gt; PRT

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&lt;400&gt; 69

Ser Arg Ser Gln Glu Glu Glu Ser Xaa Thr Ala Arg Val Ile Arg Lys  
1 5 10 15

Cys Ser Ser Leu Phe Thr  
20

&lt;210&gt; 70

&lt;211&gt; 36

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (10)..(10)

&lt;223&gt; Xaa = any amino acid

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (11)..(11)

&lt;223&gt; Xaa = any amino acid



&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (26)..(26)

&lt;223&gt; Xaa = any amino acid

&lt;400&gt; 70

Asp Met Glu His Glu Glu Lys Gln Asn Xaa Xaa Arg Ala Leu Arg Asn  
 1 5 10 15

Arg Gln Asp Leu Phe Gln Glu Glu Gly Xaa Leu Asn Leu Ile Leu Glu  
 20 25 30

Ala Ile Asp Lys  
 35

&lt;210&gt; 71

&lt;211&gt; 22

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt;

&lt;400&gt; 71

Tyr Leu Tyr Gln Leu Leu Ala Ala Ile Ile Lys Gly Asn His Thr Asn  
 1 5 10 15

Cys Ala Gln Phe Ala Asn  
 20

&lt;210&gt; 72

&lt;211&gt; 65

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (9)..(9)

&lt;223&gt; Xaa = any amino acid

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (21)..(21)

&lt;223&gt; Xaa = any amino acid

&lt;400&gt; 72

Gly Met Leu Asp Val Leu His Cys Xaa Leu Ile Asp Ser Pro Glu Ala  
 1 5 10 15

Leu Asn Met Met Xaa Asp Glu His Ile Lys Val Ile Ile Ser Leu Leu  
 20 25 30

Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys Ser Leu  
 35 40 45

Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn Ile Cys  
 50 55 60

Asp  
65

<210> 73  
<211> 19  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (10)..(10)  
<223> Xaa = any amino acid

<400> 73  
Gly Tyr Val Pro Tyr Pro Gly Gly Gly Xaa Lys Trp Gly Gly Asn Gly  
1 5 10 15

Val Gly Asp

<210> 74  
<211> 19  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (12)..(12)  
<223> Xaa = any amino acid

<400> 74  
Lys Leu Ala Glu Asn Ile His Glu Met Trp Ala Xaa Asn Lys Ile Glu  
1 5 10 15

Ala Gly Trp

<210> 75  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (7)..(7)  
<223> Xaa = any amino acid

<400> 75  
Ala Glu Lys Arg Tyr Asp Xaa Gln Leu Ala Val Gln Thr Leu Lys Thr  
1 5 10 15

<210> 76  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (8)..(8)  
 <223> Xaa = any amino acid

<400> 76  
 Asn Thr His Asn Leu Trp Ala Xaa Glu Arg Ile Gln Gln Gly Trp Thr  
 1 5 10 15

Tyr Gly Leu Asn Glu  
 20

<210> 77  
 <211> 26  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (9)..(9)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (13)..(13)  
 <223> Xaa = any amino acid

<400> 77  
 Arg Ser Pro His Leu Val Pro Tyr Xaa Lys Val Asp Xaa Ala Ile Lys  
 1 5 10 15

Lys Ala Asn Arg Asp Thr Ala Ser Glu Thr  
 20 25

<210> 78  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (6)..(6)  
 <223> Xaa = any amino acid

<400> 78  
 Trp Tyr Thr Lys Asp Xaa Pro Ile Phe Glu Asn Thr  
 1 5 10

<210> 79  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE

<222> (4)..(4)

<223> Xaa = any amino acid

<400> 79

Val Glu Ala Xaa Ser Lys Glu Ile Leu Gln Ile Glu Leu Gly Arg  
1 5 10 15

<210> 80

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<221> UNSURE

<222> (10)..(10)

<223> Xaa = any amino acid

<400> 80

Pro Pro Arg Leu Lys Val Gln Cys Leu Xaa Pro His Gln Trp Ala Arg  
1 5 10 15

Val Pro Asn

<210> 81

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<221> UNSURE

<222> (10)..(10)

<223> Xaa = any amino acid

<400> 81

Ala Leu His Ile Pro Glu Glu Asp Arg Xaa Ile Asp Ile Leu Glu Leu  
1 5 10 15

Ile Glu

<210> 82

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<221> UNSURE

<222> (9)..(9)

<223> Xaa = any amino acid

<400> 82

Asp Glu His Arg Lys Gly Leu Leu Xaa Met Lys Met Ala Glu Gly Ala  
1 5 10 15

Lys Leu Gln Met Cys Tyr Leu Leu

20

<210> 83  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (11)..(11)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (17)..(17)  
 <223> Xaa = any amino acid

<400> 83  
 Glu Ile Lys Gln Ser Asp Leu Pro Ser Ala Xaa Ala Ala Lys Lys Thr  
 1 5 10 15

Xaa Glu Phe Arg Cys Pro Pro Arg Glu Gln Met Asn  
 20 25

<210> 84  
 <211> 42  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (7)..(7)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (19)..(19)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (23)..(23)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (32)..(32)  
 <223> Xaa = any amino acid

<400> 84  
 Gly Leu Ser Gln Ile Arg Xaa Leu Leu Pro Val Gln Met Ser Gln Glu  
 1 5 10 15

Glu Glu Xaa Leu Met Arg Xaa Arg Leu Trp Lys Leu Val Asn Asn Xaa  
 20 25 30

Thr Phe Phe Gln His Pro Asp Leu Ile Arg

35

40

<210> 85  
 <211> 35  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (8)..(8)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (24)..(24)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (26)..(26)  
 <223> Xaa = any amino acid

<400> 85  
 Lys Glu Lys Asp Thr Ser His Xaa Met Val Val Ala Cys Cys Arg Phe  
 1 5 10 15

Leu Cys Tyr Phe Cys Arg Thr Xaa Arg Xaa Asn Gln Lys Ala Met Phe  
 20 25 30

Asp His Phe  
 35

<210> 86  
 <211> 50  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (37)..(37)  
 <223> Xaa = any amino acid

<400> 86  
 Arg Pro Ser Leu Arg Gly Ser Thr Pro Leu Asp Val Ala Tyr Ser Ser  
 1 5 10 15

Leu Met Glu Asn Thr Glu Leu Ala Leu Ala Leu Arg Glu His Tyr Leu  
 20 25 30

Glu Lys Ile Ala Xaa Tyr Leu Ser Arg Cys Gly Leu Gln Ser Asn Ser  
 35 40 45

Glu Leu  
 50

<210> 87  
 <211> 59

<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (21)..(21)  
<223> Xaa = any amino acid

<220>  
<221> UNSURE  
<222> (46)..(46)  
<223> Xaa = any amino acid

<400> 87  
Gly Tyr Pro Asp Leu Gly Trp Asp Pro Val Glu Gly Glu Arg Tyr Leu  
1 5 10 15  
Asp Phe Leu Arg Xaa Cys Val Trp Val Asn Gly Glu Ser Val Glu Glu  
20 25 30  
Asn Ala Asn Leu Val Ile Arg Leu Leu Ile Arg Arg Pro Xaa Cys Leu  
35 40 45  
Gly Pro Ala Leu Arg Gly Glu Gly Glu Gly Leu  
50 55

<210> 88  
<211> 24  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (13)..(13)  
<223> Xaa = any amino acid

<400> 88  
Asp Glu Asp Tyr Ile Asp Thr Gly Ala Ala Ile Leu Xaa Phe Tyr Cys  
1 5 10 15  
Thr Leu Val Asp Leu Leu Gly Arg  
20

<210> 89  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
<223>

<400> 89  
Gly Lys Asn Glu Ser Leu Arg Ala Arg Ala Ile Leu Arg Ser Leu Val  
1 5 10 15  
Pro Leu Glu Asp Leu  
20

<210> 90  
 <211> 35  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (12)..(12)  
 <223> Xaa = any amino acid

<400> 90  
 Leu Leu Asp Ala Thr Leu His Thr Val Tyr Arg Xaa Ser Lys Asn Arg  
 1 5 10 15  
 Met Leu Thr Lys Gly Gln Arg Glu Ala Val Ser Asp Phe Leu Val Ala  
 20 25 30  
 Leu Thr Ser  
 35

<210> 91  
 <211> 30  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (11)..(11)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (15)..(15)  
 <223> Xaa = any amino acid

<400> 91  
 Met Leu Leu Lys Leu Leu Arg Lys Leu Thr Xaa Asp Val Ser Xaa Leu  
 1 5 10 15  
 Ser Glu Tyr Thr Thr Val Ala Leu Arg Leu Leu Thr Leu His  
 20 25 30

<210> 92  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 92  
 Gly Ala Ser Ser Asp Glu Glu Lys Arg Leu Thr Met  
 1 5 10

<210> 93



<211> 22  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (12)..(12)  
<223> Xaa = any amino acid

<400> 93  
Pro Glu Leu Phe Gly Lys Ala Leu Pro Cys Leu Xaa Ala Ile Gly Cys  
1 5 10 15  
Ala Leu Pro Pro Asp Tyr  
20

<210> 94  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (14)..(14)  
<223> Xaa = any amino acid

<400> 94  
Gln Leu Val Pro Tyr Asp Leu Leu Thr Asp Lys Glu Lys Xaa Lys Asp  
1 5 10 15  
Arg Glu Arg Ser Gln Glu Phe Leu Lys Tyr  
20 25

<210> 95  
<211> 12  
<212> PRT  
<213> Artificial Sequence

<220>  
<223>

<400> 95  
Gly Ala Ala Ser Leu Lys Glu Lys Glu Met Val Ala  
1 5 10

<210> 96  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223>

<400> 96  
Lys Asn Cys Pro Glu Phe Ile Arg Thr Ser Met Leu Thr Phe Phe  
1 5 10 15

<210> 97  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (9)..(9)  
 <223> Xaa = any amino acid

<400> 97  
 Tyr Thr Gln Gln Ile Ile Ile Asn Xaa Ser Glu Glu Leu Leu  
 1 5 10

<210> 98  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (11)..(11)  
 <223> Xaa = any amino acid

<400> 98  
 Phe Tyr Pro Leu Leu Ile Lys Tyr Val Asp Xaa Gln Arg Asn His Trp  
 1 5 10 15

Leu

<210> 99  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (9)..(9)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (24)..(24)  
 <223> Xaa = any amino acid

<400> 99  
 Trp Ser Lys Ser Gln Tyr Phe Leu Xaa Glu Glu Gln Asn Phe Ile Ser  
 1 5 10 15

Ala Asn Glu Ile Asp Asn Met Xaa Leu Ile Met Pro Thr Ala Thr Arg  
 20 25 30

Arg

<210> 100  
<211> 32  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (21)..(21)  
<223> Xaa = any amino acid

<400> 100  
Ser Leu Met Val Ala Cys Leu Lys Arg Leu Leu Pro Val Gly Leu Asn  
1 5 10 15  
Leu Phe Ala Gly Xaa Glu Gln Glu Leu Val Gln His Cys Lys Asp Arg  
20 25 30

<210> 101  
<211> 12  
<212> PRT  
<213> Artificial Sequence

<220>  
<223>

<400> 101  
Asp Glu Met Ser Trp Gln His Tyr Leu Tyr Ser Lys  
1 5 10

<210> 102  
<211> 19  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (7)..(7)  
<223> Xaa = any amino acid

<400> 102  
Tyr Arg Ser Val Val Ser Xaa Gln Arg Lys Arg Ala Val Ile Ala Cys  
1 5 10 15

Phe Arg Gln

<210> 103  
<211> 22  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> UNSURE  
<222> (16)..(16)  
<223> Xaa = any amino acid

<400> 103

Cys Arg Gly Ala Met Thr Glu Arg Ser Gly Ala Leu Gln Glu Asp Xaa  
 1 5 10 15

Leu Tyr Met Ser Tyr Ala  
 20

<210> 104  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 104  
 Ser Ile His Glu Gln Glu Met Glu Lys Gln Lys Leu Leu Phe His Gln  
 1 5 10 15

Ala Arg

<210> 105  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 105  
 Arg Gly Val Ala Glu Met Val Leu Leu His Ile Ser Ala  
 1 5 10

<210> 106  
 <211> 48  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (11)..(11)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (21)..(21)  
 <223> Xaa = any amino acid

<400> 106  
 Ile Gln Met Gly Met Leu Asn His Leu Lys Xaa Lys Lys Asp Val Gly  
 1 5 10 15

Phe Phe Thr Ser Xaa Ala Gly Leu Met Asn Ser Cys Ser Val Leu Asp  
 20 25 30

Leu Asp Ala Phe Glu Arg Asn Thr Lys Ala Glu Gly Leu Gly Val Gly  
 35 40 45

<210> 107  
 <211> 30  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (16)..(16)  
 <223> Xaa = any amino acid

<400> 107  
 Gly Ala Ala Gly Glu Lys Asn Met His Asp Ala Glu Phe Thr Cys Xaa  
 1 5 10 15  
 Leu Phe Arg Phe Ile Gln Leu Thr Cys Glu Gly His Asn Leu  
 20 25 30

<210> 108  
 <211> 53  
 <212> PRT  
 <213> Artificial Sequence

<220>  
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 <222> (14)..(14)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (40)..(40)  
 <223> Xaa = any amino acid

<400> 108  
 Leu Arg Thr Gln Ala Gly Asn Thr Thr Thr Val Asn Val Xaa Ile Cys  
 1 5 10 15  
 Thr Val Asp Tyr Leu Leu Arg Leu Gln Glu Ser Ile Met Asp Phe Tyr  
 20 25 30  
 Trp His Tyr Ser Ser Lys Glu Xaa Ile Asp Pro Ala Gly Lys Ala Asn  
 35 40 45  
 Phe Phe Lys Ala Ile  
 50

<210> 109  
 <211> 93  
 <212> PRT  
 <213> Artificial Sequence

<220>  
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 <222> (9)..(9)  
 <223> Xaa = any amino acid

<220>

<221> UNSURE  
 <222> (44)..(44)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (66)..(66)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (75)..(75)  
 <223> Xaa = any amino acid

<400> 109  
 Asn Gln Gln Ala Leu Ala His Ser Xaa Leu Trp Asp Ala Val Gly Gly  
 1 5 10 15  
 Phe Leu Phe Leu Phe Ser His Met Gln Asp Lys Leu Ser Lys His Ser  
 20 25 30  
 Ser Gln Val Asp Leu Leu Lys Glu Leu Leu Asn Xaa Gln Lys Asp Met  
 35 40 45  
 Ile Thr Met Met Leu Ser Met Leu Glu Gly Asn Val Val Asn Gly Thr  
 50 55 60  
 Ile Xaa Lys Gln Met Val Asp Thr Leu Val Xaa Ser Ala Ser Asn Val  
 65 70 75 80  
 Glu Leu Ile Leu Lys Tyr Phe Asp Met Phe Leu Lys Leu  
 85 90

<210> 110  
 <211> 24  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 110  
 Lys Glu Ile Gly Phe Asn Leu Ala Val Leu Leu Thr Asn Leu Ser Glu  
 1 5 10 15  
 His Met Pro Asn Glu Pro Arg Leu  
 20

<210> 111  
 <211> 19  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (13)..(14)  
 <223> Xaa = any amino acid

&lt;400&gt; 111

Ser Lys Arg Ile Glu Arg Val Tyr Phe Glu Ile Lys Xaa Xaa Asn Ile  
1 5 10 15

Glu Gln Trp

&lt;210&gt; 112

&lt;211&gt; 34

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (17)..(17)

&lt;223&gt; Xaa = any amino acid

&lt;400&gt; 112

Glu Ser Lys Arg Ala Phe Phe Tyr Ser Ile Val Thr Glu Gly Gly Asp  
1 5 10 15

Xaa Glu Lys Leu Glu Ala Phe Val Asn Phe Cys Glu Asp Ala Ile Phe  
20 25 30

Glu Met

&lt;210&gt; 113

&lt;211&gt; 17

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt;

&lt;400&gt; 113

Leu Ala Arg Asn Phe Tyr Asn Leu Lys Tyr Val Ala Leu Val Leu Ala  
1 5 10 15

Phe

&lt;210&gt; 114

&lt;211&gt; 19

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt;

&lt;400&gt; 114

Tyr Tyr His Leu Lys Val Pro Leu Ala Ile Phe Lys Arg Glu Lys Glu  
1 5 10 15

Ile Ala Arg

<210> 115  
 <211> 50  
 <212> PRT  
 <213> Artificial Sequence

<220>  
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 <222> (8)..(8)  
 <223> Xaa = any amino acid

<220>  
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 <222> (21)..(21)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (31)..(31)  
 <223> Xaa = any amino acid

<220>  
 <221> UNSURE  
 <222> (37)..(37)  
 <223> Xaa = any amino acid

<400> 115  
 Glu Gln Pro Glu Asp Asp Asp Xaa Lys Ser His Trp Asp Lys Leu Val  
 1 5 10 15  
 Ile Ser Ala Lys Xaa Phe Pro Val Asn Tyr Trp Asp Lys Phe Xaa Lys  
 20 25 30  
 Lys Lys Val Arg Xaa Lys Tyr Ser Glu Thr Tyr Asp Phe Asp Ser Ile  
 35 40 45  
 Ser Asn  
 50

<210> 116  
 <211> 57  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (36)..(36)  
 <223> Xaa = any amino acid

<400> 116  
 Phe Phe Phe Ala Ala His Leu Leu Asp Val Ala Val Gly Phe Lys Thr  
 1 5 10 15  
 Leu Arg Thr Ile Leu Gln Ser Val Thr His Asn Gly Lys Gln Leu Val  
 20 25 30  
 Leu Thr Val Xaa Leu Leu Thr Ile Ile Val Tyr Ile Tyr Thr Val Ile  
 35 40 45



Ala Phe Asn Phe Phe Arg Lys Phe Tyr  
 50 55

<210> 117  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> UNSURE  
 <222> (11)..(11)  
 <223> Xaa = any amino acid

<400> 117  
 Cys His Asp Met Leu Thr Cys Phe Val Phe Xaa Leu Tyr Lys Gly Val  
 1 5 10 15

Arg Ala Gly Gly Gly Ile Gly Asp Glu  
 20 25

<210> 118  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 118  
 Ile Leu Leu Ala Ile Ile Gln Gly Leu Ile Ile Asp Ala Phe Gly Glu  
 1 5 10 15

Leu Arg Asp Gln Leu Glu Ser Val Lys  
 20 25

<210> 119  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223>

<400> 119  
 Glu His Asn Leu Ala Asn Tyr Met Phe Phe Leu Met His Leu Ile Asn  
 1 5 10 15

Lys Pro Asp Thr Glu Tyr Thr Gly Gln Glu Thr Tyr Val Trp Asn Met  
 20 25 30

Tyr

<210> 120  
 <211> 5127  
 <212> PRT

&lt;213&gt; Drosophila melanogaster .

&lt;220&gt;

&lt;223&gt; gi 17352465

&lt;400&gt; 120

Met Ala Glu Ala Glu Gly Gly Ser Glu Gln Asp Asp Val Ser Phe Leu  
 1 5 10 15

Arg Thr Glu Asp Met Val Thr Leu Ser Cys Thr Ala Thr Gly Glu Arg  
 20 25 30

Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu  
 35 40 45

Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe  
 50 55 60

Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65 70 75 80

Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
 85 90 95

Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met  
 100 105 110

Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
 115 120 125

Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
 130 135 140

Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
 145 150 155 160

Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His  
 165 170 175

Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val  
 180 185 190

Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys  
 195 200 205

Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly  
 210 215 220

Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Gly Arg Glu Ala Gly  
 225 230 235 240

Gln Asn Ile Val Ile Tyr Glu Gly Gly Val Val Met Ala Gln Ala Arg  
 245 250 255

Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Thr Gly Gly Phe  
 260 265 270

Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Ile Thr Thr Gly Arg  
 275 280 285

Tyr Leu Gly Val Asn Asp Ser Asn Glu Leu Ile Leu Val Lys Lys Glu  
 290 295 300  
 Glu Ala Ser Ile Ala Thr Thr Thr Phe Cys Leu Arg Gln Glu Lys Asp  
 305 310 315 320  
 Asp Glu Lys Lys Val Leu Glu Asp Lys Asp Leu Glu Val Ile Gly Ser  
 325 330 335  
 Pro Ile Ile Lys Tyr Gly Asp Thr Thr Val Ile Val Gln His Cys Glu  
 340 345 350  
 Thr Ser Leu Trp Leu Ser Tyr Lys Ser Tyr Glu Thr Lys Lys Lys Gly  
 355 360 365  
 Val Gly Lys Val Glu Glu Lys Gln Ala Ile Leu His Glu Glu Gly Lys  
 370 375 380  
 Met Asp Asp Cys Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser Lys  
 385 390 395 400  
 Thr Ala Arg Val Ile Arg Lys Cys Ser Ser Leu Phe Thr Gln Phe Ile  
 405 410 415  
 Thr Ala Leu Glu Thr Leu Gln Ser Asn Arg Arg His Ser Ile Phe Phe  
 420 425 430  
 Gln Lys Val Asn Leu Asn Glu Met Val Met Cys Leu Glu Asp Leu Ile  
 435 440 445  
 Asn Tyr Phe Ser Gln Pro Glu Asp Asp Met Glu His Glu Glu Lys Gln  
 450 455 460  
 Asn Arg Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu Glu  
 465 470 475 480  
 Gly Val Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Ile Asn Ile Ile  
 485 490 495  
 Thr Ser Gln Gly Phe Leu Ala Ser Phe Leu Ala Gly Asp Glu Thr Gly  
 500 505 510  
 Gln Ser Trp Asp Leu Ile Ser Thr Tyr Leu Tyr Gln Leu Leu Ala Ala  
 515 520 525  
 Ile Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser Asn  
 530 535 540  
 Arg Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Ser Glu  
 545 550 555 560  
 Gly Ser Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro  
 565 570 575  
 Glu Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile Ser  
 580 585 590  
 Leu Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys  
 595 600 605

Ser Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn  
 610 615 620  
 Ile Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Leu  
 625 630 635 640  
 Leu Val Asp His Val Ala Ser Ile Arg Pro Asn Ile Phe Val Gly Arg  
 645 650 655  
 Val Asp Gly Ser Ser Met Tyr Gln Lys Trp Tyr Phe Glu Val Thr Met  
 660 665 670  
 Asp His Ile Glu Gln Thr Thr His Met Met Pro His Leu Arg Ile Gly  
 675 680 685  
 Trp Ala Asn Thr Ser Gly Tyr Val Pro Tyr Pro Gly Gly Gly Lys Lys  
 690 695 700  
 Trp Gly Gly Asn Gly Val Gly Asp Asp Leu Tyr Ser Phe Gly Phe Asp  
 705 710 715 720  
 Gly Ala Phe Leu Trp Thr Gly Gly Arg Lys Thr Leu Val Val Asp Ala  
 725 730 735  
 Leu Pro Glu Glu Pro Phe Ile Arg Lys Gly Asp Val Ile Gly Val Ala  
 740 745 750  
 Ile Asp Leu Ser Val Pro Ile Ile Thr Phe Thr Phe Asn Gly Val Lys  
 755 760 765  
 Val Arg Gly Ser Phe Arg Asp Phe Asn Leu Asp Gly Met Phe Phe Pro  
 770 775 780  
 Val Met Ser Cys Ser Ser Lys Leu Ser Cys Arg Phe Leu Phe Gly Gly  
 785 790 795 800  
 Asp His Gly Arg Leu Lys Phe Ala Pro Pro Met Gly Phe Ser Ala Leu  
 805 810 815  
 Val Gln Cys Leu Met Pro Gln Gln Ile Leu Ser Leu Asp Pro Cys Phe  
 820 825 830  
 Tyr Phe Gly Asn Leu Ala Lys Asn Val Leu Ala Gly Pro Trp Leu Ile  
 835 840 845  
 Glu Asp Asp Thr Ala Phe Val Pro Lys Pro Val Asp Thr Thr Gly Val  
 850 855 860  
 Thr Leu Pro Ser Ser Val Asp Gln Ile Lys Glu Lys Leu Ala Glu Asn  
 865 870 875 880  
 Ile His Glu Met Trp Ala Leu Asn Lys Ile Glu Ala Gly Trp Ser Trp  
 885 890 895  
 Gly Glu His Arg Asp Asp Tyr His Arg Ile His Pro Cys Leu Thr His  
 900 905 910  
 Phe Glu Lys Leu Pro Ala Ala Glu Lys Arg Tyr Asp Asn Gln Leu Ala  
 915 920 925

Val Gln Thr Leu Lys Thr Ile Ile Ser Leu Gly Tyr Tyr Ile Thr Met  
 930 935 940  
 Asp Lys Pro Pro Ala Arg Ile Arg Pro Val Arg Leu Pro Asn Glu Ile  
 945 950 955 960  
 Phe Met Gln Gly Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser Ala  
 965 970 975  
 Val Thr Leu Thr Pro Lys Leu Glu Glu Leu Val Asp Gln Leu Ala Glu  
 980 985 990  
 Asn Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp Thr  
 995 1000 1005  
 Tyr Gly Leu Asn Glu Asp Ser Glu Asn His Arg Ser Pro His Leu  
 1010 1015 1020  
 Val Pro Tyr Ala Lys Val Asp Glu Ala Ile Lys Lys Ala Asn Arg  
 1025 1030 1035  
 Asp Thr Ala Ser Glu Thr Val Arg Thr Leu Leu Val Tyr Gly Tyr  
 1040 1045 1050  
 Val Leu Asp Pro Pro Thr Gly Glu Gly Thr Glu Ala Leu Leu Ala  
 1055 1060 1065  
 Glu Ala Gln Arg Leu Lys Phe Ala Gly Phe Arg Thr Tyr Arg Val  
 1070 1075 1080  
 Glu Arg Asn Tyr Ala Val Thr Ser Gly Lys Trp Tyr Phe Glu Phe  
 1085 1090 1095  
 Glu Val Leu Thr Ser Gly Pro Met Arg Val Gly Trp Ala Arg Ala  
 1100 1105 1110  
 Asp Cys Tyr Pro Gly Ala Met Leu Gly Ser Glu Asp Thr Ser Trp  
 1115 1120 1125  
 Ala Phe Asp Gly His Asn Val Thr Lys Met His Ala Gly Ser Ile  
 1130 1135 1140  
 Glu His Phe Gly Val Arg Tyr Glu Ala Gly Asp Val Ile Gly Cys  
 1145 1150 1155  
 Phe Ile Asp Val Lys Glu Gln Thr Ile Ser Phe Ser Leu Asn Gly  
 1160 1165 1170  
 Glu Leu Leu Met Asp Ala Leu Gly Gly Glu Thr Thr Phe Ala Asp  
 1175 1180 1185  
 Val Thr Ala Glu Gly Val Gly Phe Val Pro Ala Cys Thr Leu Gly  
 1190 1195 1200  
 Val Gly Gln Lys Ala Arg Leu Ile Tyr Gly Gln Asp Val Asp Ser  
 1205 1210 1215  
 Leu Lys Phe Phe Thr Thr Cys Gly Leu Gln Glu Gly Tyr Glu Pro  
 1220 1225 1230

Phe	Cys	Val	Asn	Met	Arg	Arg	Pro	Val	Thr	His	Trp	Tyr	Thr	Lys
1235						1240					1245			
Asp	Gln	Pro	Ile	Phe	Glu	Asn	Thr	Glu	Glu	Met	Pro	Asp	Cys	Arg
1250						1255					1260			
Ile	Asp	Val	Thr	Arg	Ile	Pro	Gly	Gly	Ala	Asp	Thr	Pro	Pro	His
1265						1270					1275			
Leu	Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Lys	Ala	Asn
1280						1285					1290			
Trp	Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Thr	Cys	Met	Gly	Glu
1295						1300					1305			
Phe	Ile	Ser	Glu	Gln	Glu	Lys	Ala	Arg	Arg	Trp	Asp	Glu	Ile	Lys
1310						1315					1320			
Asn	Arg	Gln	Tyr	Arg	Leu	Met	Arg	Glu	Ala	Glu	Ile	Ala	Ala	Gln
1325						1330					1335			
Met	Gln	Val	Gln	Thr	Gln	Ala	Ala	His	Met	Asp	His	Met	Leu	Lys
1340						1345					1350			
Gly	Gly	Phe	Asn	Met	Asn	Asp	Ile	Lys	Gly	Leu	Thr	Arg	Asn	Phe
1355						1360					1365			
Asp	Glu	His	Ala	Asp	Ala	Glu	Ala	Asp	His	Met	Met	Arg	Gly	Pro
1370						1375					1380			
Asn	Arg	Pro	Pro	Arg	Lys	Gly	Ser	Leu	Thr	Arg	Asn	Ile	Thr	Phe
1385						1390					1395			
Glu	Thr	Asp	Met	Ser	Ala	Ala	Leu	Asp	Glu	Met	Gln	Arg	Ser	Thr
1400						1405					1410			
Ser	Val	Leu	Asp	Met	Asn	Gly	Leu	Gly	Glu	Glu	Met	Asp	Asp	Lys
1415						1420					1425			
Lys	Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys	Phe	Phe	Ser	Lys	Lys	Ser
1430						1435					1440			
Arg	Asp	Gln	Ser	Arg	Glu	Lys	Met	Gly	Ala	Arg	Thr	Leu	Asp	Thr
1445						1450					1455			
Ser	Leu	Glu	Arg	Arg	Asn	Thr	Val	Ala	His	Gly	Arg	Asn	Val	Val
1460						1465					1470			
Asn	Gln	Gln	Met	Thr	Thr	Arg	Ala	Pro	Thr	Leu	Arg	Leu	Asn	Asn
1475						1480					1485			
Ala	Glu	Ile	Pro	Pro	Ser	Pro	Val	Pro	Gln	Gly	Pro	Lys	Gln	Leu
1490						1495					1500			
Ser	Gly	Ser	Asn	Leu	Gly	Gln	Gln	Pro	Val	Glu	Thr	Ser	Gly	Asp
1505						1510					1515			
Glu	Met	Phe	Asp	Ala	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu	Tyr	Phe
1520						1525					1530			

Tyr	Gly	Val	Arg	Ile	Phe	Pro	Gly	Gln	Asp	Pro	Thr	His	Val	Tyr
1535						1540					1545			
Val	Gly	Trp	Val	Thr	Thr	Gln	Tyr	His	Leu	His	Ser	Arg	Glu	Phe
1550						1555					1560			
Asn	Lys	Asn	Lys	Val	Arg	Arg	Gly	Ser	Val	Tyr	Ile	Glu	Asp	Asp
1565						1570					1575			
Tyr	Glu	Met	Ala	Ile	Glu	Arg	Ile	Asp	Arg	Gln	Ser	Cys	Tyr	Val
1580						1585					1590			
Val	Arg	Ala	Asp	Glu	Leu	Phe	Asn	Glu	Val	Thr	Gln	Asp	Ala	Ser
1595						1600					1605			
Gly	Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Val	Gly	Cys	Phe	Val	Asp
1610						1615					1620			
Thr	Ala	Thr	Gly	Ile	Ile	Arg	Phe	Thr	Cys	Glu	Gly	Lys	Asp	Thr
1625						1630					1635			
Ser	His	Arg	Trp	Met	Met	Glu	Pro	Asp	Thr	Lys	Leu	Phe	Pro	Ala
1640						1645					1650			
Ile	Phe	Val	Glu	Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile	Glu	Leu
1655						1660					1665			
Gly	Arg	Thr	Pro	Thr	Thr	Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Pro
1670						1675					1680			
Thr	Ser	Asp	Lys	His	Ile	Asn	Pro	Gln	Ser	Pro	Pro	Arg	Leu	Lys
1685						1690					1695			
Val	Gln	Cys	Leu	Arg	Pro	His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Thr
1700						1705					1710			
Ala	Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Asp	Val	Arg	Gly	Trp
1715						1720					1725			
Ser	Met	Leu	Cys	Glu	Asp	Pro	Val	Ser	Met	Leu	Ala	Leu	His	Ile
1730						1735					1740			
Pro	Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu	Leu	Ile	Glu	Met
1745						1750					1755			
Asp	Lys	Leu	Leu	Ser	Phe	His	Ala	His	Ser	Leu	Thr	Leu	Tyr	Ala
1760						1765					1770			
Ala	Leu	Cys	Tyr	Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Ala	Leu	Cys
1775						1780					1785			
Gln	His	Val	Asp	Gln	Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Arg	Ser	Glu
1790						1795					1800			
Tyr	Met	Ser	Gly	Pro	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Ile
1805						1810					1815			
Ala	Leu	His	Leu	Glu	Ser	His	Ala	Thr	Thr	Met	Glu	Val	Cys	Lys
1820						1825					1830			

Asn Glu Tyr Ile Thr Pro Leu Gly Ala Glu Leu Lys Glu Leu Tyr	1835	1840	1845
Ser Asp Glu Glu Met Gln His Ser Leu Arg Ser Leu Val Thr Glu	1850	1855	1860
Ser Val Arg Pro Gln Leu Arg Met Thr Glu Ile Thr Pro Pro Val	1865	1870	1875
Ile Ala Thr Ser Ser Met Pro Ser Val Ser Ser Glu Pro Ile Pro	1880	1885	1890
Asp Ile Asp Gln Leu Tyr Ser Pro Lys Phe Pro Leu Glu Val Val	1895	1900	1905
Arg Gln Phe Val Met Glu Ala Leu Lys Asp Ala Val Glu Ile Asn	1910	1915	1920
Gln Val His Asn Arg Asp Pro Ile Gly Trp Thr Asn Glu Asn Leu	1925	1930	1935
Phe Leu Pro Leu Ile Lys Leu Thr Asp Arg Leu Leu Leu Val Gly	1940	1945	1950
Val Leu Thr Asp Glu Asp Val Gln Arg Leu Leu Val Met Ile Asp	1955	1960	1965
Pro Glu Thr Trp Asp Gln Ala Phe Glu Arg Glu Gly Lys Asp Glu	1970	1975	1980
His Arg Lys Gly Leu Leu Thr Met Lys Met Ala Glu Gly Ala Lys	1985	1990	1995
Leu Gln Met Cys Tyr Leu Leu His His Leu Tyr Asp Thr Gln Leu	2000	2005	2010
Arg His Arg Val Glu Ser Ile Ile Ala Phe Ser His Asp Phe Val	2015	2020	2025
Gly Asp Leu Gln Thr Asp Gln Leu Arg Arg Tyr Ile Glu Ile Lys	2030	2035	2040
Gln Ser Asp Leu Pro Ser Ala Val Ala Ala Lys Lys Thr Lys Glu	2045	2050	2055
Phe Arg Cys Pro Pro Arg Glu Gln Met Asn Gln Ile Leu Cys Phe	2060	2065	2070
Lys Asn Leu Glu Pro Asp Asp Gln Asp Asn Cys Thr Cys Gly Leu	2075	2080	2085
Glu Leu Arg Gly Arg Leu Gly Asp Phe His Asp Ser Leu Met Gln	2090	2095	2100
Lys Val Ser Leu Asn Ala Leu Gln Glu Pro Asp Gly Val Glu Gly	2105	2110	2115
Thr Ala Ile Glu Glu Val Lys Thr Gly Pro Ile Thr Lys Ile Tyr	2120	2125	2130



Asn Phe Ile Asn Thr Val Lys Glu Leu Glu Glu Gly Pro Lys Glu	2135	2140	2145
Val Glu Glu Pro Glu Lys Lys Thr Pro Glu Glu Val Phe Arg Lys	2150	2155	2160
Val Leu Ile Lys Thr Ile Val Ser Trp Ala Glu Glu Ser Gln Ile	2165	2170	2175
Glu Asn Pro Lys Leu Val Arg Glu Met Phe Ser Leu Leu Leu Arg	2180	2185	2190
Gln Tyr Asp Thr Val Gly Glu Leu Val Arg Ala Leu Glu Lys Thr	2195	2200	2205
Tyr Val Ile Asn Thr Arg Ala Arg Asp Asp Val Ala Glu Met Trp	2210	2215	2220
Val Gly Leu Ser Gln Ile Arg Ala Leu Leu Pro Val Gln Met Ser	2225	2230	2235
Gln Glu Glu Glu Glu Leu Met Arg Lys Arg Leu Trp Lys Leu Val	2240	2245	2250
Asn Asn Ala Thr Phe Phe Gln His Pro Asp Leu Ile Arg Ile Leu	2255	2260	2265
Arg Val His Glu Asn Val Met Ala Val Met Met Asn Thr Leu Gly	2270	2275	2280
Arg Arg Ala Gln Ala Gln Ser Asp Ala Pro Thr Gln Ser Glu Val	2285	2290	2295
Ala Glu Gly Ala Pro Ser Lys Glu Lys Asp Thr Ser His Glu Met	2300	2305	2310
Val Val Ala Cys Cys Arg Phe Leu Cys Tyr Phe Cys Arg Thr Gly	2315	2320	2325
Arg Gln Asn Gln Lys Ala Met Phe Asp His Phe Asp Phe Leu Leu	2330	2335	2340
Asp Asn Ala Asn Ile Leu Leu Ala Arg Pro Ser Leu Arg Gly Ser	2345	2350	2355
Thr Pro Leu Asp Val Ala Tyr Ser Ser Leu Met Glu Asn Thr Glu	2360	2365	2370
Leu Ala Leu Ala Leu Arg Glu His Tyr Leu Glu Lys Ile Ala Val	2375	2380	2385
Tyr Leu Ser Arg Cys Gly Leu Gln Ser Asn Ser Glu Leu Val Glu	2390	2395	2400
Lys Gly Tyr Pro Asp Leu Gly Trp Asp Pro Val Glu Gly Glu Arg	2405	2410	2415
Tyr Leu Asp Phe Leu Arg Tyr Cys Val Trp Val Asn Gly Glu Ser	2420	2425	2430

Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg	Arg
2435						2440					2445			
Pro	Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly	Leu
2450						2455					2460			
Phe	Arg	Ala	Ile	Val	Glu	Ala	Asn	Arg	Met	Ser	Glu	Arg	Ile	Ser
2465						2470					2475			
Asp	Arg	Cys	Lys	Met	Gln	Asp	Glu	Ala	Glu	Gly	Thr	Ile	Ala	Gly
2480						2485					2490			
Leu	Asn	Phe	Thr	His	Pro	Leu	Pro	Glu	Gly	Glu	Glu	Asp	Glu	Asp
2495						2500					2505			
Tyr	Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu
2510						2515					2520			
Val	Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Ser	Val	Ile	Glu
2525						2530					2535			
Gln	Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ile	Leu	Arg	Ser
2540						2545					2550			
Leu	Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Lys	Phe
2555						2560					2565			
Thr	Leu	Ser	Gln	Thr	Ala	Pro	Gly	Glu	Glu	Lys	Pro	Lys	Ser	Asp
2570						2575					2580			
Met	Pro	Ser	Gly	Leu	Leu	Pro	Asn	Asn	Lys	Gln	Ser	Ile	Val	Leu
2585						2590					2595			
Phe	Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Ala	Gln	Asp	Leu	Phe	Tyr
2600						2605					2610			
Arg	Leu	Leu	Glu	Asp	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Thr	Ala	Thr
2615						2620					2625			
Ile	Leu	Asp	Lys	Ser	Asp	Gly	Ser	Glu	Ser	Asp	Met	Ala	Leu	Ala
2630						2635					2640			
Met	Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys
2645						2650					2655			
His	Ser	Lys	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu	Leu
2660						2665					2670			
Asp	Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met
2675						2680					2685			
Leu	Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val	Ala
2690						2695					2700			
Leu	Thr	Ser	Gln	Met	Gln	Pro	Ala	Met	Leu	Leu	Lys	Leu	Leu	Arg
2705						2710					2715			
Lys	Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val
2720						2725					2730			

Ala	Leu	Arg	Leu	Leu	Thr	Leu	His	Phe	Asp	Arg	Cys	Ala	Lys	Tyr
2735						2740					2745			
Tyr	Gly	Ser	Thr	Gln	Gly	Gln	Gly	Ser	Tyr	Gly	Ala	Ser	Ser	Asp
2750						2755					2760			
Glu	Glu	Lys	Arg	Leu	Thr	Met	Leu	Leu	Phe	Ser	Asn	Ile	Phe	Asp
2765						2770					2775			
Ser	Leu	Ser	Asn	Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	Lys	Ala
2780						2785					2790			
Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr
2795						2800					2805			
Ser	Leu	Ser	Lys	Asn	Thr	Asp	Glu	Asp	Tyr	Tyr	Gly	Arg	Gln	Met
2810						2815					2820			
Gly	Ala	Pro	Asp	Gln	Pro	Gln	Tyr	Met	Pro	Asn	Pro	Ile	Asp	Thr
2825						2830					2835			
Asn	Asn	Val	His	Leu	Asp	Asn	Asp	Leu	Asn	Ser	Leu	Val	Gln	Lys
2840						2845					2850			
Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Arg	Leu	Glu
2855						2860					2865			
Gly	Gly	Trp	Thr	Tyr	Gly	Asp	Ile	Arg	Ser	Asp	Asn	Asp	Arg	Lys
2870						2875					2880			
His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Ser	Glu	Tyr	Glu	Arg
2885						2890					2895			
Glu	Arg	Tyr	Arg	Asp	Pro	Val	Arg	Glu	Cys	Leu	Lys	Gly	Leu	Leu
2900						2905					2910			
Ala	Ile	Gly	Trp	Thr	Val	Glu	His	Ser	Glu	Val	Glu	Val	Ala	Leu
2915						2920					2925			
Asn	His	Arg	Gly	Ser	Thr	Arg	Arg	Gln	Ser	Lys	Pro	Gln	Ile	Asn
2930						2935					2940			
Glu	Phe	Gln	Asn	Glu	Gly	Ser	Pro	Phe	Asn	Tyr	Asn	Pro	His	Pro
2945						2950					2955			
Val	Asp	Met	Ser	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn	Met
2960						2965					2970			
Ala	Glu	Arg	Leu	Ala	Glu	Asn	Ser	His	Asp	Ile	Trp	Ala	Lys	Lys
2975						2980					2985			
Lys	Asn	Glu	Glu	Leu	Asn	Gly	Cys	Gly	Gly	Val	Ile	His	Pro	Gln
2990						2995					3000			
Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Lys	Lys	Asp
3005						3010					3015			
Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Met	Gln	Tyr	Gln	Gly
3020						3025					3030			

Tyr	Lys	Leu	His	Lys	Pro	Ser	Lys	Gly	Gly	Ala	Val	Glu	Glu	Gly
3035						3040					3045			
Gly	Ala	Thr	Gln	Ala	Ala	Val	Glu	Leu	Arg	Phe	Ser	Tyr	Ser	Leu
3050						3055					3060			
Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Leu	Asp	Arg	Ala	Thr	Ile	Asn	Met
3065						3070					3075			
Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe
3080						3085					3090			
Lys	Thr	Ala	Thr	Arg	Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu
3095						3100					3105			
Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile
3110						3115					3120			
Ala	Ile	Ala	Thr	Ala	Thr	Asn	Asn	Ile	Gly	Ala	Ala	Ser	Leu	Lys
3125						3130					3135			
Glu	Lys	Glu	Met	Val	Ala	Ser	Ile	Phe	Cys	Lys	Leu	Ala	Ala	Leu
3140						3145					3150			
Leu	Arg	Asn	Arg	Leu	Ser	Ala	Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr
3155						3160					3165			
Val	Arg	Cys	Leu	Gln	Val	Leu	Val	Lys	Gly	Ile	Asp	Ala	Arg	Thr
3170						3175					3180			
Leu	Thr	Lys	Asn	Cys	Pro	Glu	Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr
3185						3190					3195			
Phe	Phe	Asn	Gln	Thr	Ser	Asp	Asp	Leu	Gly	Asn	Thr	Ile	Leu	Asn
3200						3205					3210			
Leu	Gln	Asp	Gly	Lys	Tyr	Ser	His	Leu	Arg	Gly	Thr	His	Leu	Lys
3215						3220					3225			
Thr	Ser	Thr	Ser	Leu	Gly	Tyr	Val	Asn	Gln	Val	Val	Leu	Pro	Val
3230						3235					3240			
Leu	Thr	Ala	Met	Phe	Asp	His	Leu	Ala	Ala	Cys	Asp	Tyr	Gly	Ser
3245						3250					3255			
Asp	Leu	Leu	Leu	Asp	Glu	Ile	Gln	Val	Ala	Ser	Tyr	Lys	Ile	Leu
3260						3265					3270			
Ala	Ala	Leu	Tyr	His	Leu	Gly	Thr	Asp	Gly	Thr	Leu	Thr	His	Asp
3275						3280					3285			
Arg	Lys	Tyr	Leu	Lys	Thr	Glu	Ile	Glu	Arg	His	Arg	Pro	Ala	Leu
3290						3295					3300			
Gly	Ser	Cys	Leu	Gly	Ala	Tyr	Ser	Ser	Cys	Phe	Pro	Val	Ala	Phe
3305						3310					3315			
Leu	Glu	Pro	His	Leu	Asn	Lys	His	Asn	Gln	Tyr	Ser	Leu	Leu	Asn
3320						3325					3330			

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Leu Asn 3635	Leu Phe Ala Gly Arg 3640	Glu Gln Glu Leu Val 3645	Gln His Cys
Lys Asp 3650	Arg Tyr Leu Lys Lys 3655	Met Pro Glu Tyr Asp 3660	Val Ile Glu
Phe Ala 3665	Arg Asn Gln Leu Thr 3670	Leu Pro Asp Lys Leu 3675	Asp Pro Ser
Asp Glu 3680	Met Ser Trp Gln His 3685	Tyr Leu Tyr Ser Lys 3690	Leu Gly Lys
Thr Glu 3695	Glu Pro Val Asp Glu 3700	Gln Ala Leu Glu Lys 3705	Ala Asn Val
Asn Ser 3710	Asn Glu Lys Gly Lys 3715	Asp Lys Thr Gln Glu 3720	Thr Val Asp
Arg Ile 3725	Val Ala Met Ala Lys 3730	Val Leu Phe Gly Leu 3735	His Met Ile
Asp His 3740	Pro Gln Gln Gln Ser 3745	Lys Asn Val Tyr Arg 3750	Ser Val Val
Ser Ile 3755	Gln Arg Lys Arg Ala 3760	Val Ile Ala Cys Phe 3765	Arg Gln Thr
Ser Leu 3770	His Ser Leu Pro Arg 3775	His Arg Ala Cys Asn 3780	Ile Phe Ala
Arg Ser 3785	Tyr Tyr Glu Gln Trp 3790	Leu Gln Glu Glu Asn 3795	Val Gly Gln
Glu Val 3800	Met Val Glu Asp Leu 3805	Thr Gln Thr Phe Glu 3810	Asp Ser Glu
Lys Ser 3815	Lys Lys Glu Gly Glu 3820	Glu Thr Asp Ser Lys 3825	Pro Asp Pro
Leu Thr 3830	Gln Leu Val Thr Thr 3835	Phe Cys Arg Gly Ala 3840	Met Thr Glu
Arg Ser 3845	Gly Ala Leu Gln Glu 3850	Asp Leu Leu Tyr Met 3855	Ser Tyr Ala
Gln Ile 3860	Ala Ala Lys Ser Thr 3865	Gly Lys Glu Glu Glu 3870	Glu Gly Gly
Asp Glu 3875	Glu Gly Gly Glu Gly 3880	Gly Glu Glu Gly Glu 3885	Gly Thr Ser
Ile His 3890	Glu Gln Glu Met Glu 3895	Lys Gln Lys Leu Leu 3900	Phe His Gln
Ala Arg 3905	Leu Ser Asn Arg Gly 3910	Val Ala Glu Met Val 3915	Leu Leu His
Ile Ser 3920	Ala Ser Lys Gly Ile 3925	Pro Ser Glu Met Val 3930	Met Thr Thr

321

Thr	Pro	Glu	Glu	Met	Asp	Phe	Leu	Leu	Ala	Cys	Cys	Glu	Arg	Asn
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His	Glu	Gly	Lys	Ile	Asp	Tyr	Arg	Ala	Phe	Val	Glu	His	Phe	His
4250						4255					4260			
Glu	Pro	Ser	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu	Thr
4265						4270					4275			
Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala	Arg	Phe
4280						4285					4290			
Leu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	Glu	Pro	Phe	Leu
4295						4300					4305			
Gly	Arg	Ile	Glu	Ile	Leu	Gly	Ser	Ser	Lys	Arg	Ile	Glu	Arg	Val
4310						4315					4320			
Tyr	Phe	Glu	Ile	Lys	Asp	Ser	Asn	Ile	Glu	Gln	Trp	Glu	Lys	Pro
4325						4330					4335			
Gln	Ile	Arg	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile	Val	Thr
4340						4345					4350			
Glu	Gly	Gly	Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn	Phe	Cys
4355						4360					4365			
Glu	Asp	Ala	Ile	Phe	Glu	Met	Thr	His	Ala	Ser	Gly	Leu	Met	Ala
4370						4375					4380			
Thr	Asp	Asp	Gly	Gly	Gly	Asn	Val	Lys	Arg	Asp	Thr	Ala	Tyr	Ser
4385						4390					4395			
Ser	Tyr	Met	Ser	Glu	Glu	Glu	Glu	Glu	Arg	Ala	Ala	Arg	Asp	Pro
4400						4405					4410			
Ile	Arg	Arg	Thr	Ile	Thr	Ala	Val	Lys	Glu	Gly	Leu	Lys	Phe	Gly
4415						4420					4425			
Val	His	Met	Leu	Ser	Pro	Ala	Asn	Ile	Lys	His	Gln	Ile	Gly	Val
4430						4435					4440			
Met	Gln	Thr	Lys	Ser	Ile	Pro	Glu	Leu	Ile	Val	Gly	Phe	Phe	Lys
4445						4450					4455			
Ile	Ile	Phe	Tyr	Ile	Phe	Tyr	Tyr	Thr	Gly	Tyr	Ala	His	Phe	Cys
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Val	Val	Arg	Tyr	Ile	Phe	Gly	Ile	Leu	Leu	Asn	Leu	Met	Arg	Gly
4475						4480					4485			
Pro	Ala	Pro	Glu	Gln	Glu	Glu	Glu	Pro	Val	Val	Glu	Glu	Glu	Thr
4490						4495					4500			
Phe	Gly	Arg	Ala	Leu	Pro	Pro	Leu	Pro	Leu	Glu	Glu	Pro	Pro	Gly
4505						4510					4515			
Thr	Val	Gln	Ala	Phe	Gly	Leu	Asp	Ile	Asn	Lys	Glu	Glu	Asn	Gly
4520						4525					4530			



Met	Tyr	Lys	Val	Val	Val	His	Glu	Ser	Pro	Ala	Asn	Ser	Ser	Met
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Glu	Glu	Gly	Gly	Glu	Ser	Ser	Pro	Glu	Asp	Gly	Ala	Ala	Ala	Ser
4550						4555					4560			
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4565						4570					4575			
Val	Asp	Leu	Leu	Gly	Gly	Glu	Ala	Ala	Lys	Lys	Ala	Ala	Gln	Glu
4580						4585					4590			
Arg	Gln	Glu	Ala	Gln	Lys	Ala	Gln	Glu	Ala	Ala	Met	Ala	Ser	Ile
4595						4600					4605			
Glu	Ala	Glu	Ala	Lys	Lys	Ser	Ser	Ser	Ala	Pro	Gln	Glu	Thr	Pro
4610						4615					4620			
Ala	Val	His	Gln	Ile	Asp	Phe	Ser	Gln	Tyr	Thr	His	Arg	Ala	Val
4625						4630					4635			
Ser	Phe	Leu	Ala	Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu
4640						4645					4650			
Val	Leu	Ala	Phe	Ser	Ile	Asn	Phe	Met	Leu	Leu	Phe	Tyr	Lys	Val
4655						4660					4665			
Thr	Ser	Phe	Thr	Glu	Glu	Ala	Asp	Ser	Ser	Ala	Glu	Glu	Glu	Leu
4670						4675					4680			
Ile	Leu	Gly	Ser	Gly	Ser	Gly	Gly	Gly	Ala	Asp	Ile	Thr	Gly	Ser
4685						4690					4695			
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4715						4720					4725			
Tyr	Met	Glu	His	Val	Leu	Arg	Ile	Ala	Ala	Cys	Leu	His	Ser	Leu
4730						4735					4740			
Val	Ser	Leu	Ala	Met	Leu	Ile	Ala	Tyr	Tyr	His	Leu	Lys	Val	Pro
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Phe	Glu	Gly	Leu	Phe	Ile	Ala	Glu	Gln	Pro	Glu	Asp	Asp	Asp	Phe
4775						4780					4785			
Lys	Ser	His	Trp	Asp	Lys	Leu	Val	Ile	Ser	Ala	Lys	Ser	Phe	Pro
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4820						4825					4830			

Met	Glu	Lys	Ser	Thr	Phe	Ala	Ala	Gln	Glu	Ser	Glu	Glu	Thr	Gly
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4925						4930					4935			
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4940						4945					4950			
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Phe	His	Leu	Tyr	Lys	Gly	Val	Arg	Ala	Gly	Gly	Gly	Ile	Gly	Asp
4970						4975					4980			
Glu	Ile	Gly	Asp	Pro	Asp	Gly	Asp	Asp	Tyr	Glu	Val	Tyr	Arg	Ile
4985						4990					4995			
Ile	Phe	Asp	Ile	Thr	Phe	Phe	Phe	Phe	Val	Ile	Ile	Ile	Leu	Leu
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Ala	Ile	Ile	Gln	Gly	Leu	Ile	Ile	Asp	Ala	Phe	Gly	Glu	Leu	Arg
5015						5020					5025			
Asp	Gln	Leu	Glu	Ser	Val	Lys	Asp	Asn	Met	Glu	Ser	Asn	Cys	Phe
5030						5035					5040			
Ile	Cys	Gly	Met	Gly	Lys	Asp	Phe	Phe	Asp	Ile	Val	Pro	His	Gly
5045						5050					5055			
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5060						5065					5070			
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5075						5080					5085			
Gly	Gln	Glu	Thr	Tyr	Val	Trp	Asn	Met	Tyr	Gln	Gln	Arg	Ser	Trp
5090						5095					5100			
Asp	Phe	Phe	Pro	Val	Gly	Asp	Cys	Phe	Arg	Lys	Gln	Tyr	Glu	Asp
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 35 40 45  
 Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe  
 50 55 60  
 Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65 70 75 80  
 Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
 85 90 95  
 Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met  
 100 105 110  
 Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
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 Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
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 Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
 145 150 155 160  
 Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His  
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 Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val  
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 Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys  
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 Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly  
 210 215 220  
 Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Gly Arg Glu Ala Gly  
 225 230 235 240  
 Gln Asn Ile Val Ile Tyr Glu Gly Gly Val Val Met Ala Gln Ala Arg  
 245 250 255  
 Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Thr Gly Gly Phe  
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Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Ile Thr Thr Gly Arg  
 275 280 285  
 Tyr Leu Gly Val Asn Asp Ser Asn Glu Leu Ile Leu Val Lys Lys Glu  
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 Asp Glu Lys Lys Val Leu Glu Asp Lys Asp Leu Glu Val Ile Gly Ser  
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 Pro Ile Ile Lys Tyr Gly Asp Thr Thr Val Ile Val Gln His Cys Glu  
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 Thr Ser Leu Trp Leu Ser Tyr Lys Ser Tyr Glu Thr Lys Lys Lys Gly  
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 Val Gly Lys Val Glu Glu Lys Gln Ala Ile Leu His Glu Glu Gly Lys  
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 385 390 395 400  
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 405 410 415  
 Thr Ala Leu Glu Thr Leu Gln Ser Asn Arg Arg His Ser Ile Phe Phe  
 420 425 430  
 Gln Lys Val Asn Leu Asn Glu Met Val Met Cys Leu Glu Asp Leu Ile  
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 Gly Ser Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro  
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Leu Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys  
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 Asp His Ile Glu Gln Thr Thr His Met Met Pro His Leu Arg Ile Gly  
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 850 855 860  
 Thr Leu Pro Ser Ser Val Asp Gln Ile Lys Glu Lys Leu Ala Glu Asn  
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Leu Lys	Phe Phe Thr Thr	Cys	Gly Leu Gln Glu	Gly	Tyr Glu Pro
1220		1225		1230	
Phe Cys	Val Asn Met Arg	Arg	Pro Val Thr His	Trp	Tyr Thr Lys
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Asp Gln	Pro Ile Phe Glu	Asn	Thr Glu Glu Met	Pro	Asp Cys Arg
1250		1255		1260	
Ile Asp	Val Thr Arg Ile	Pro	Gly Gly Ala Asp	Thr	Pro Pro His
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Leu Lys	Ile Ser His Asn	Thr	Phe Glu Thr Met	Glu	Lys Ala Asn
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Trp Glu	Phe Leu Arg Leu	Ser	Leu Pro Val Thr	Cys	Met Gly Glu
1295		1300		1305	
Phe Ile	Ser Glu Gln Glu	Lys	Ala Arg Arg Trp	Asp	Glu Ile Lys
1310		1315		1320	
Asn Arg	Gln Tyr Arg Leu	Met	Arg Glu Ala Glu	Ile	Ala Ala Gln
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Met Gln	Val Gln Thr Gln	Ala	Ala His Met Asp	His	Met Leu Lys
1340		1345		1350	
Gly Gly	Phe Asn Met Asn	Asp	Ile Lys Gly Leu	Thr	Arg Asn Phe
1355		1360		1365	
Asp Glu	His Ala Asp Ala	Glu	Ala Asp His Met	Met	Arg Gly Pro
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Asn Arg	Pro Pro Arg Lys	Gly	Ser Leu Thr Arg	Asn	Ile Thr Phe
1385		1390		1395	
Glu Thr	Asp Met Ser Ala	Ala	Leu Asp Glu Met	Gln	Arg Ser Thr
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Ser Val	Leu Asp Met Asn	Gly	Leu Gly Glu Glu	Met	Asp Asp Lys
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1565						1570					1575			
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1715						1720					1725			
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1730						1735					1740			
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1835						1840					1845			
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1865						1870					1875			
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Glu	His	Arg	Lys	Gly	Leu	Leu	Thr	Met	Lys	Met	Ala	Glu	Gly	Ala
1970						1975					1980			
Lys	Leu	Gln	Met	Cys	Tyr	Leu	Leu	His	His	Leu	Tyr	Asp	Thr	Gln
1985						1990					1995			
Leu	Arg	His	Arg	Val	Glu	Ser	Ile	Ile	Ala	Phe	Ser	His	Asp	Phe
2000						2005					2010			
Val	Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Ile	Glu	Ile
2015						2020					2025			
Lys	Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Lys
2030						2035					2040			
Glu	Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Gln	Ile	Leu	Cys
2045						2050					2055			
Phe	Lys	Asn	Leu	Glu	Pro	Asp	Asp	Gln	Asp	Asn	Cys	Thr	Cys	Gly
2060						2065					2070			
Leu	Glu	Leu	Arg	Gly	Arg	Leu	Gly	Asp	Phe	His	Asp	Ser	Leu	Met
2075						2080					2085			
Gln	Lys	Val	Ser	Leu	Asn	Ala	Leu	Gln	Glu	Pro	Asp	Gly	Val	Glu
2090						2095					2100			
Gly	Thr	Ala	Ile	Glu	Glu	Val	Lys	Thr	Gly	Pro	Ile	Thr	Lys	Ile
2105						2110					2115			

Tyr	Asn	Phe	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Gly	Pro	Lys
2120						2125					2130			
Glu	Val	Glu	Glu	Pro	Glu	Lys	Lys	Thr	Pro	Glu	Glu	Val	Phe	Arg
2135						2140					2145			
Lys	Val	Leu	Ile	Lys	Thr	Ile	Val	Ser	Trp	Ala	Glu	Glu	Ser	Gln
2150						2155					2160			
Ile	Glu	Asn	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Leu
2165						2170					2175			
Arg	Gln	Tyr	Asp	Thr	Val	Gly	Glu	Leu	Val	Arg	Ala	Leu	Glu	Lys
2180						2185					2190			
Thr	Tyr	Val	Ile	Asn	Thr	Arg	Ala	Arg	Asp	Asp	Val	Ala	Glu	Met
2195						2200					2205			
Trp	Val	Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met
2210						2215					2220			
Ser	Gln	Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu
2225						2230					2235			
Val	Asn	Asn	Ala	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Ile
2240						2245					2250			
Leu	Arg	Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Leu
2255						2260					2265			
Gly	Arg	Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Thr	Gln	Ser	Glu
2270						2275					2280			
Val	Ala	Glu	Gly	Ala	Pro	Ser	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu
2285						2290					2295			
Met	Val	Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr
2300						2305					2310			
Gly	Arg	Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu
2315						2320					2325			
Leu	Asp	Asn	Ala	Asn	Ile	Leu	Leu	Ala	Arg	Pro	Ser	Leu	Arg	Gly
2330						2335					2340			
Ser	Thr	Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr
2345						2350					2355			
Glu	Leu	Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala
2360						2365					2370			
Val	Tyr	Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Val
2375						2380					2385			
Glu	Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu
2390						2395					2400			
Arg	Tyr	Leu	Asp	Phe	Leu	Arg	Tyr	Cys	Val	Trp	Val	Asn	Gly	Glu
2405						2410					2415			

Ser Val	Glu Glu Asn Ala	Asn	Leu Val Ile Arg	Leu	Leu Ile Arg
2420		2425		2430	
Arg Pro	Glu Cys Leu Gly	Pro	Ala Leu Arg Gly	Glu	Gly Glu Gly
2435		2440		2445	
Leu Phe	Arg Ala Ile Val	Glu	Ala Asn Arg Met	Ser	Glu Arg Ile
2450		2455		2460	
Ser Asp	Arg Cys Lys Met	Gln	Asp Glu Ala Glu	Gly	Thr Ile Ala
2465		2470		2475	
Gly Leu	Asn Phe Thr His	Pro	Leu Pro Glu Gly	Glu	Glu Asp Glu
2480		2485		2490	
Asp Tyr	Ile Asp Thr Gly	Ala	Ala Ile Leu Asn	Phe	Tyr Cys Thr
2495		2500		2505	
Leu Val	Asp Leu Leu Gly	Arg	Cys Ala Pro Asp	Ala	Ser Val Ile
2510		2515		2520	
Glu Gln	Gly Lys Asn Glu	Ser	Leu Arg Ala Arg	Ala	Ile Leu Arg
2525		2530		2535	
Ser Leu	Val Pro Leu Glu	Asp	Leu Gln Gly Val	Leu	Ser Leu Lys
2540		2545		2550	
Phe Thr	Leu Ser Gln Thr	Ala	Pro Gly Glu Glu	Lys	Pro Lys Ser
2555		2560		2565	
Asp Met	Pro Ser Gly Leu	Leu	Pro Asn Asn Lys	Gln	Ser Ile Val
2570		2575		2580	
Leu Phe	Leu Glu Arg Val	Tyr	Gly Ile Glu Ala	Gln	Asp Leu Phe
2585		2590		2595	
Tyr Arg	Leu Leu Glu Asp	Ala	Phe Leu Pro Asp	Leu	Arg Thr Ala
2600		2605		2610	
Thr Ile	Leu Asp Lys Ser	Asp	Gly Ser Glu Ser	Asp	Met Ala Leu
2615		2620		2625	
Ala Met	Asn Arg Tyr Ile	Gly	Asn Ser Ile Leu	Pro	Leu Leu Ile
2630		2635		2640	
Lys His	Ser Lys Phe Tyr	Asn	Glu Ala Glu Asn	Tyr	Ala Ser Leu
2645		2650		2655	
Leu Asp	Ala Thr Leu His	Thr	Val Tyr Arg Leu	Ser	Lys Asn Arg
2660		2665		2670	
Met Leu	Thr Lys Gly Gln	Arg	Glu Ala Val Ser	Asp	Phe Leu Val
2675		2680		2685	
Ala Leu	Thr Ser Gln Met	Gln	Pro Ala Met Leu	Leu	Lys Leu Leu
2690		2695		2700	
Arg Lys	Leu Thr Val Asp	Val	Ser Lys Leu Ser	Glu	Tyr Thr Thr
2705		2710		2715	

Val	Ala	Leu	Arg	Leu	Leu	Thr	Leu	His	Phe	Asp	Arg	Cys	Ala	Lys
2720						2725					2730			
Tyr	Tyr	Gly	Ser	Thr	Gln	Gly	Gln	Gly	Ser	Tyr	Gly	Ala	Ser	Ser
2735						2740					2745			
Asp	Glu	Glu	Lys	Arg	Leu	Thr	Met	Leu	Leu	Phe	Ser	Asn	Ile	Phe
2750						2755					2760			
Asp	Ser	Leu	Ser	Asn	Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	Lys
2765						2770					2775			
Ala	Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp
2780						2785					2790			
Tyr	Ser	Leu	Ser	Lys	Asn	Thr	Asp	Glu	Asp	Tyr	Tyr	Gly	Arg	Gln
2795						2800					2805			
Met	Gly	Ala	Pro	Asp	Gln	Pro	Gln	Tyr	Met	Pro	Asn	Pro	Ile	Asp
2810						2815					2820			
Thr	Asn	Asn	Val	His	Leu	Asp	Asn	Asp	Leu	Asn	Ser	Leu	Val	Gln
2825						2830					2835			
Lys	Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Arg	Leu
2840						2845					2850			
Glu	Gly	Gly	Trp	Thr	Tyr	Gly	Asp	Ile	Arg	Ser	Asp	Asn	Asp	Arg
2855						2860					2865			
Lys	His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Ser	Glu	Tyr	Glu
2870						2875					2880			
Arg	Glu	Arg	Tyr	Arg	Asp	Pro	Val	Arg	Glu	Cys	Leu	Lys	Gly	Leu
2885						2890					2895			
Leu	Ala	Ile	Gly	Trp	Thr	Val	Glu	His	Ser	Glu	Val	Glu	Val	Ala
2900						2905					2910			
Leu	Asn	His	Arg	Gly	Ser	Thr	Arg	Arg	Gln	Ser	Lys	Pro	Gln	Ile
2915						2920					2925			
Asn	Glu	Phe	Gln	Asn	Glu	Gly	Ser	Pro	Phe	Asn	Tyr	Asn	Pro	His
2930						2935					2940			
Pro	Val	Asp	Met	Ser	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn
2945						2950					2955			
Met	Ala	Glu	Arg	Leu	Ala	Glu	Asn	Ser	His	Asp	Ile	Trp	Ala	Lys
2960						2965					2970			
Lys	Lys	Asn	Glu	Glu	Leu	Asn	Gly	Cys	Gly	Gly	Val	Ile	His	Pro
2975						2980					2985			
Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Lys	Lys
2990						2995					3000			
Asp	Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Met	Gln	Tyr	Gln
3005						3010					3015			

Gly Tyr	Lys Leu His	Lys Pro	Ser Lys	Gly Gly	Ala Val	Glu Glu	
3020		3025			3030		
Gly Gly	Ala Thr Gln	Ala Ala	Val Glu	Leu Arg	Phe Ser	Tyr Ser	
3035		3040			3045		
Leu Leu	Glu Lys Leu	Ile Gln	Tyr Leu	Asp Arg	Ala Thr	Ile Asn	
3050		3055			3060		
Met Lys	Leu Leu Lys	Pro Ser	Thr Thr	Phe Ser	Arg Arg	Ser Ser	
3065		3070			3075		
Phe Lys	Thr Ala Thr	Arg Asp	Ile Lys	Phe Phe	Ser Lys	Val Val	
3080		3085			3090		
Leu Pro	Leu Met Glu	Lys Tyr	Phe Ser	Thr His	Arg Asn	Tyr Phe	
3095		3100			3105		
Ile Ala	Ile Ala Thr	Ala Thr	Asn Asn	Ile Gly	Ala Ala	Ser Leu	
3110		3115			3120		
Lys Glu	Lys Glu Met	Val Ala	Ser Ile	Phe Cys	Lys Leu	Ala Ala	
3125		3130			3135		
Leu Leu	Arg Asn Arg	Leu Ser	Ala Phe	Gly Pro	Asp Val	Arg Ile	
3140		3145			3150		
Thr Val	Arg Cys Leu	Gln Val	Leu Val	Lys Gly	Ile Asp	Ala Arg	
3155		3160			3165		
Thr Leu	Thr Lys Asn	Cys Pro	Glu Phe	Ile Arg	Thr Ser	Met Leu	
3170		3175			3180		
Thr Phe	Phe Asn Gln	Thr Ser	Asp Asp	Leu Gly	Asn Thr	Ile Leu	
3185		3190			3195		
Asn Leu	Gln Asp Gly	Lys Tyr	Ser His	Leu Arg	Gly Thr	His Leu	
3200		3205			3210		
Lys Thr	Ser Thr Ser	Leu Gly	Tyr Val	Asn Gln	Val Val	Leu Pro	
3215		3220			3225		
Val Leu	Thr Ala Met	Phe Asp	His Leu	Ala Ala	Cys Asp	Tyr Gly	
3230		3235			3240		
Ser Asp	Leu Leu Leu	Asp Glu	Ile Gln	Val Ala	Ser Tyr	Lys Ile	
3245		3250			3255		
Leu Ala	Ala Leu Tyr	His Leu	Gly Thr	Asp Gly	Thr Leu	Thr His	
3260		3265			3270		
Asp Arg	Lys Tyr Leu	Lys Thr	Glu Ile	Glu Arg	His Arg	Pro Ala	
3275		3280			3285		
Leu Gly	Ser Cys Leu	Gly Ala	Tyr Ser	Ser Cys	Phe Pro	Val Ala	
3290		3295			3300		
Phe Leu	Glu Pro His	Leu Asn	Lys His	Asn Gln	Tyr Ser	Leu Leu	
3305		3310			3315		

Asn Arg	Ile Ala Asp His	Ser	Leu Glu Ala Gln Asp	Ile Met Val
3320		3325		3330
Lys Met	Glu Ser Cys Met	Pro	Asn Leu Glu Thr Ile	Leu Ala Glu
3335		3340		3345
Val Asp	Gln Phe Val Glu Ser	Asp Lys Thr Tyr	Asn	Asp Ala Pro
3350		3355		3360
His Ile	Ile Asp Val Ile	Leu	Pro Leu Leu Cys Ala	Tyr Leu Pro
3365		3370		3375
Phe Trp	Trp Ser Gln Gly	Pro	Asp Asn Val Ser	Pro Thr Ser Gly
3380		3385		3390
Asn His	Val Thr Met Val	Thr	Ala Asp His Met	Asn Pro Leu Leu
3395		3400		3405
Arg Asn	Val Leu Lys Met	Ile	Lys Lys Asn Ile	Gly Asn Asp Asn
3410		3415		3420
Ala Pro	Trp Met Thr Arg	Ile	Ala Ala Tyr Thr	Gln Gln Ile Ile
3425		3430		3435
Ile Asn	Thr Ser Glu Glu	Leu	Leu Lys Asp Pro	Phe Leu Pro Leu
3440		3445		3450
Ala Glu	Arg Val Lys Lys	Arg	Thr Glu Asn Met	Leu His Lys Glu
3455		3460		3465
Asp Ser	Met Arg Gly Phe	Ile	Lys Ser Ala Thr	Asp Asp Thr Ser
3470		3475		3480
Gln Val	Glu Thr Gln Leu	Gln	Glu Asp Trp Asn	Leu Leu Val Arg
3485		3490		3495
Asp Ile	Tyr Ser Phe Tyr	Pro	Leu Leu Ile Lys	Tyr Val Asp Leu
3500		3505		3510
Gln Arg	Asn His Trp Leu	Lys	Asp Asn Ile Pro	Glu Ala Glu Glu
3515		3520		3525
Leu Tyr	Asn His Val Ala	Glu	Ile Phe Asn Ile	Trp Ser Lys Ser
3530		3535		3540
Gln Tyr	Phe Leu Lys Glu	Glu	Gln Asn Phe Ile	Ser Ala Asn Glu
3545		3550		3555
Ile Asp	Asn Met Ala Leu	Ile	Met Pro Thr Ala	Thr Arg Arg Ser
3560		3565		3570
Ala Ile	Ser Glu Gly Ala	Pro	Ala Val Gly Gly	Lys Val Lys Lys
3575		3580		3585
Lys Lys	Lys Asn Arg Asp	Lys	Lys Arg Asp Lys	Asp Lys Glu Val
3590		3595		3600
Gln Ala	Ser Leu Met Val	Ala	Cys Leu Lys Arg	Leu Leu Pro Val
3605		3610		3615

Gly	Leu	Asn	Leu	Phe	Ala	Gly	Arg	Glu	Gln	Glu	Leu	Val	Gln	His
3620						3625					3630			
Cys	Lys	Asp	Arg	Tyr	Leu	Lys	Lys	Met	Pro	Glu	Tyr	Asp	Val	Ile
3635						3640					3645			
Glu	Phe	Ala	Arg	Asn	Gln	Leu	Thr	Leu	Pro	Asp	Lys	Leu	Asp	Pro
3650						3655					3660			
Ser	Asp	Glu	Met	Ser	Trp	Gln	His	Tyr	Leu	Tyr	Ser	Lys	Leu	Gly
3665						3670					3675			
Lys	Thr	Glu	Glu	Pro	Val	Asp	Glu	Gln	Ala	Leu	Glu	Lys	Ala	Asn
3680						3685					3690			
Val	Asn	Ser	Asn	Glu	Lys	Gly	Lys	Asp	Lys	Thr	Gln	Glu	Thr	Val
3695						3700					3705			
Asp	Arg	Ile	Val	Ala	Met	Ala	Lys	Val	Leu	Phe	Gly	Leu	His	Met
3710						3715					3720			
Ile	Asp	His	Pro	Gln	Gln	Gln	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val
3725						3730					3735			
Val	Ser	Ile	Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln
3740						3745					3750			
Thr	Ser	Leu	His	Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe
3755						3760					3765			
Ala	Arg	Ser	Tyr	Tyr	Glu	Gln	Trp	Leu	Gln	Glu	Glu	Asn	Val	Gly
3770						3775					3780			
Gln	Glu	Val	Met	Val	Glu	Asp	Leu	Thr	Gln	Thr	Phe	Glu	Asp	Ser
3785						3790					3795			
Glu	Lys	Ser	Lys	Lys	Glu	Gly	Glu	Glu	Thr	Asp	Ser	Lys	Pro	Asp
3800						3805					3810			
Pro	Leu	Thr	Gln	Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr
3815						3820					3825			
Glu	Arg	Ser	Gly	Ala	Leu	Gln	Glu	Asp	Leu	Leu	Tyr	Met	Ser	Tyr
3830						3835					3840			
Ala	Gln	Ile	Ala	Ala	Lys	Ser	Thr	Gly	Lys	Glu	Glu	Glu	Glu	Gly
3845						3850					3855			
Gly	Asp	Glu	Glu	Gly	Gly	Glu	Gly	Gly	Glu	Glu	Gly	Glu	Gly	Thr
3860						3865					3870			
Ser	Ile	His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His
3875						3880					3885			
Gln	Ala	Arg	Leu	Ser	Asn	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	Leu
3890						3895					3900			
His	Ile	Ser	Ala	Ser	Lys	Gly	Ile	Pro	Ser	Glu	Met	Val	Met	Thr
3905						3910					3915			

Thr	Leu	Asn	Leu	Gly	Ile	Ala	Ile	Leu	Arg	Gly	Gly	Asn	Ile	Asp
3920						3925					3930			
Ile	Gln	Met	Gly	Met	Leu	Asn	His	Leu	Lys	Glu	Lys	Lys	Asp	Val
3935						3940					3945			
Gly	Phe	Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser	Val
3950						3955					3960			
Leu	Asp	Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly	Leu
3965						3970					3975			
Gly	Val	Gly	Ser	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	Asp
3980						3985					3990			
Ala	Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	Cys
3995						4000					4005			
Glu	Gly	His	Asn	Leu	Glu	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala
4010						4015					4020			
Gly	Asn	Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr
4025						4030					4035			
Leu	Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr
4040						4045					4050			
Ser	Ser	Lys	Glu	Ile	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe
4055						4060					4065			
Lys	Ala	Ile	Glu	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Thr	Glu
4070						4075					4080			
Val	Ile	Gln	Gly	Pro	Cys	Thr	Leu	Asn	Gln	Gln	Ala	Leu	Ala	His
4085						4090					4095			
Ser	Arg	Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser
4100						4105					4110			
His	Met	Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu
4115						4120					4125			
Leu	Lys	Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Thr	Met	Met
4130						4135					4140			
Leu	Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys
4145						4150					4155			
Gln	Met	Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	Leu
4160						4165					4170			
Ile	Leu	Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Ala	Asp	Leu	Ile
4175						4180					4185			
Glu	Ser	Pro	Ser	Phe	His	Glu	Val	Asp	Met	Lys	Asn	Glu	Gly	Trp
4190						4195					4200			
Val	Thr	Pro	Lys	Asp	Phe	Arg	Glu	Lys	Met	Glu	Gln	Ser	Lys	Asn
4205						4210					4215			



Tyr	Thr	Pro	Glu	Glu	Met	Asp	Phe	Leu	Leu	Ala	Cys	Cys	Glu	Arg
4220						4225					4230			
Asn	His	Glu	Gly	Lys	Ile	Asp	Tyr	Arg	Ala	Phe	Val	Glu	His	Phe
4235						4240					4245			
His	Glu	Pro	Ser	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu
4250						4255					4260			
Thr	Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala	Arg
4265						4270					4275			
Phe	Leu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	Glu	Pro	Phe
4280						4285					4290			
Leu	Gly	Arg	Ile	Glu	Ile	Leu	Gly	Ser	Ser	Lys	Arg	Ile	Glu	Arg
4295						4300					4305			
Val	Tyr	Phe	Glu	Ile	Lys	Asp	Ser	Asn	Ile	Glu	Gln	Trp	Glu	Lys
4310						4315					4320			
Pro	Gln	Ile	Arg	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile	Val
4325						4330					4335			
Thr	Glu	Gly	Gly	Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn	Phe
4340						4345					4350			
Cys	Glu	Asp	Ala	Ile	Phe	Glu	Met	Thr	His	Ala	Ser	Gly	Leu	Met
4355						4360					4365			
Ala	Thr	Asp	Asp	Gly	Gly	Gly	Asn	Val	Lys	Arg	Asp	Thr	Ala	Tyr
4370						4375					4380			
Ser	Ser	Tyr	Met	Ser	Glu	Glu	Glu	Glu	Glu	Arg	Ala	Ala	Arg	Asp
4385						4390					4395			
Pro	Ile	Arg	Arg	Thr	Ile	Thr	Ala	Val	Lys	Glu	Gly	Leu	Lys	Phe
4400						4405					4410			
Gly	Val	His	Met	Leu	Ser	Pro	Ala	Asn	Ile	Lys	His	Gln	Ile	Gly
4415						4420					4425			
Val	Met	Gln	Thr	Lys	Ser	Ile	Pro	Glu	Leu	Ile	Val	Gly	Phe	Phe
4430						4435					4440			
Lys	Ile	Ile	Phe	Tyr	Ile	Phe	Tyr	Tyr	Thr	Gly	Tyr	Ala	His	Phe
4445						4450					4455			
Cys	Val	Val	Arg	Tyr	Ile	Phe	Gly	Ile	Leu	Leu	Asn	Leu	Met	Arg
4460						4465					4470			
Gly	Pro	Ala	Pro	Glu	Gln	Glu	Glu	Glu	Pro	Val	Val	Glu	Glu	Glu
4475						4480					4485			
Thr	Phe	Gly	Arg	Ala	Leu	Pro	Pro	Leu	Pro	Leu	Glu	Glu	Pro	Pro
4490						4495					4500			
Gly	Thr	Val	Gln	Ala	Phe	Gly	Leu	Asp	Ile	Asn	Lys	Glu	Glu	Asn
4505						4510					4515			

Gly Met	Tyr Lys Val Val Val	His Glu Ser Pro Ala	Asn Ser Ser
4520		4525	4530
Met Glu	Glu Gly Gly Glu Ser	Ser Pro Glu Asp Gly	Ala Ala Ala
4535		4540	4545
Ser Gly	Glu Leu Val Glu Gly	Glu Pro His Gln Glu	Pro Ile Ser
4550		4555	4560
Ile Val	Asp Leu Leu Gly Gly	Glu Ala Ala Lys Lys	Ala Ala Gln
4565		4570	4575
Glu Arg	Gln Glu Ala Gln Lys	Ala Gln Glu Ala Ala	Met Ala Ser
4580		4585	4590
Ile Glu	Ala Glu Ala Lys Lys	Ser Ser Ser Ala Pro	Gln Glu Thr
4595		4600	4605
Pro Ala	Val His Gln Ile Asp	Phe Ser Gln Tyr Thr	His Arg Ala
4610		4615	4620
Val Ser	Phe Leu Ala Arg Asn	Phe Tyr Asn Leu Lys	Tyr Val Ala
4625		4630	4635
Leu Val	Leu Ala Phe Ser Ile	Asn Phe Met Leu Leu	Phe Tyr Lys
4640		4645	4650
Val Thr	Ser Phe Thr Glu Glu	Ala Asp Ser Ser Ala	Glu Glu Glu
4655		4660	4665
Leu Ile	Leu Gly Ser Gly Ser	Gly Gly Gly Ala Asp	Ile Thr Gly
4670		4675	4680
Ser Gly	Phe Gly Gly Ser Gly	Asp Gly Gly Ser Gly	Asp Gly Glu
4685		4690	4695
Met Glu	Asp Glu Ile Pro Glu	Leu Val His Val Asp	Glu Asp Phe
4700		4705	4710
Phe Tyr	Met Glu His Val Leu	Arg Ile Ala Ala Cys	Leu His Ser
4715		4720	4725
Leu Val	Ser Leu Ala Met Leu	Ile Ala Tyr Tyr His	Leu Lys Val
4730		4735	4740
Pro Leu	Ala Ile Phe Lys Arg	Glu Lys Glu Ile Ala	Arg Arg Leu
4745		4750	4755
Glu Phe	Glu Gly Leu Phe Ile	Ala Glu Gln Pro Glu	Asp Asp Asp
4760		4765	4770
Phe Lys	Ser His Trp Asp Lys	Leu Val Ile Ser Ala	Lys Ser Phe
4775		4780	4785
Pro Val	Asn Tyr Trp Asp Lys	Phe Val Lys Lys Lys	Val Arg Gln
4790		4795	4800
Lys Tyr	Ser Glu Thr Tyr Asp	Phe Asp Ser Ile Ser	Asn Leu Leu
4805		4810	4815

Gly Met	Glu Lys Ser Thr	Phe	Ala Ala Gln Glu Ser	Glu Glu Thr
4820		4825		4830
Gly Ile	Phe Lys Tyr Ile	Met	Asn Ile Asp Trp Arg	Tyr Gln Val
4835		4840		4845
Trp Lys	Ala Gly Val Thr	Phe	Thr Asp Asn Ala Phe	Leu Tyr Ser
4850		4855		4860
Leu Trp	Tyr Phe Ser Phe	Ser	Val Met Gly Asn Phe	Asn Asn Phe
4865		4870		4875
Phe Phe	Ala Ala His Leu	Leu	Asp Val Ala Val Gly	Phe Lys Thr
4880		4885		4890
Leu Arg	Thr Ile Leu Gln	Ser	Val Thr His Asn Gly	Lys Gln Leu
4895		4900		4905
Val Leu	Thr Val Met Leu	Leu	Thr Ile Ile Val Tyr	Ile Tyr Thr
4910		4915		4920
Val Ile	Ala Phe Asn Phe	Phe	Arg Lys Phe Tyr Ile	Gln Glu Glu
4925		4930		4935
Asp Glu	Glu Val Asp Lys	Lys	Cys His Asp Met Leu	Thr Cys Phe
4940		4945		4950
Val Phe	His Leu Tyr Lys	Gly	Val Arg Ala Gly Gly	Gly Ile Gly
4955		4960		4965
Asp Glu	Ile Gly Asp Pro	Asp	Gly Asp Asp Tyr Glu	Val Tyr Arg
4970		4975		4980
Ile Ile	Phe Asp Ile Thr	Phe	Phe Phe Phe Val Ile	Ile Ile Leu
4985		4990		4995
Leu Ala	Ile Ile Gln Gly	Leu	Ile Ile Asp Ala Phe	Gly Glu Leu
5000		5005		5010
Arg Asp	Gln Leu Glu Ser	Val	Lys Asp Asn Met Glu	Ser Asn Cys
5015		5020		5025
Phe Ile	Cys Gly Met Gly	Lys	Asp Phe Phe Asp Ile	Val Pro His
5030		5035		5040
Gly Phe	Asp Thr His Val	Gln	Lys Glu His Asn Leu	Ala Asn Tyr
5045		5050		5055
Met Phe	Phe Leu Met His	Leu	Ile Asn Lys Pro Asp	Thr Glu Tyr
5060		5065		5070
Thr Gly	Gln Glu Thr Tyr	Val	Trp Asn Met Tyr Gln	Gln Arg Ser
5075		5080		5085
Trp Asp	Phe Phe Pro Val	Gly	Asp Cys Phe Arg Lys	Gln Tyr Glu
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Asp Glu	Leu Ser Gly Gly	Gly	Gly Gly Gly	
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 <213> *Drosophila melanogaster*

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 <223> gi 17352469

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 Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu  
 35 40 45  
 Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe  
 50 55 60  
 Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65 70 75 80  
 Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
 85 90 95  
 Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met  
 100 105 110  
 Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
 115 120 125  
 Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
 130 135 140  
 Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
 145 150 155 160  
 Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His  
 165 170 175  
 Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val  
 180 185 190  
 Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys  
 195 200 205  
 Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly  
 210 215 220  
 Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Gly Arg Glu Ala Gly  
 225 230 235 240  
 Gln Asn Ile Val Ile Tyr Glu Gly Gly Val Val Met Ala Gln Ala Arg  
 245 250 255  
 Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Thr Gly Gly Phe

260					265					270					
Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg	His	Ile	Thr	Thr	Gly	Arg
	275						280					285			
Tyr	Leu	Gly	Val	Asn	Asp	Ser	Asn	Glu	Leu	Ile	Leu	Val	Lys	Lys	Glu
	290					295					300				
Glu	Ala	Ser	Ile	Ala	Thr	Thr	Thr	Phe	Cys	Leu	Arg	Gln	Glu	Lys	Asp
305					310					315					320
Asp	Glu	Lys	Lys	Val	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Val	Ile	Gly	Ser
				325					330					335	
Pro	Ile	Ile	Lys	Tyr	Gly	Asp	Thr	Thr	Val	Ile	Val	Gln	His	Cys	Glu
			340				345						350		
Thr	Ser	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr	Glu	Thr	Lys	Lys	Lys	Gly
		355					360					365			
Val	Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile	Leu	His	Glu	Glu	Gly	Lys
	370					375					380				
Met	Asp	Asp	Cys	Leu	Asp	Phe	Ser	Arg	Ser	Gln	Glu	Glu	Glu	Ser	Lys
385					390					395					400
Thr	Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Gln	Phe	Ile
				405					410					415	
Thr	Ala	Leu	Glu	Thr	Leu	Gln	Ser	Asn	Arg	Arg	His	Ser	Ile	Phe	Phe
			420					425					430		
Gln	Lys	Val	Asn	Leu	Asn	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu	Ile
		435					440					445			
Asn	Tyr	Phe	Ser	Gln	Pro	Glu	Asp	Asp	Met	Glu	His	Glu	Glu	Lys	Gln
	450					455					460				
Asn	Arg	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu	Glu
465					470					475					480
Gly	Val	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Ile	Asn	Ile	Ile
				485					490					495	
Thr	Ser	Gln	Gly	Phe	Leu	Ala	Ser	Phe	Leu	Ala	Gly	Asp	Glu	Thr	Gly
			500					505					510		
Gln	Ser	Trp	Asp	Leu	Ile	Ser	Thr	Tyr	Leu	Tyr	Gln	Leu	Leu	Ala	Ala
		515					520					525			
Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	Gln	Phe	Ala	Asn	Ser	Asn
	530					535					540				
Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	Ser	Ser	Glu
545					550					555					560
Gly	Ser	Gly	Met	Leu	Asp	Val	Leu	His	Cys	Val	Leu	Ile	Asp	Ser	Pro
				565					570					575	
Glu	Ala	Leu	Asn	Met	Met	Arg	Asp	Glu	His	Ile	Lys	Val	Ile	Ile	Ser

580					585					590					
Leu	Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys	Val	Leu	Asp	Val	Leu	Cys
		595					600					605			
Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	Arg	Ser	Ser	Gln	Asn	Asn
	610					615					620				
Ile	Cys	Asp	Phe	Leu	Leu	Pro	Gly	Lys	Asn	Leu	Leu	Leu	Gln	Thr	Leu
625					630					635					640
Leu	Val	Asp	His	Val	Ala	Ser	Ile	Arg	Pro	Asn	Ile	Phe	Val	Gly	Arg
				645					650					655	
Val	Asp	Gly	Ser	Ser	Met	Tyr	Gln	Lys	Trp	Tyr	Phe	Glu	Val	Thr	Met
			660					665					670		
Asp	His	Ile	Glu	Gln	Thr	Thr	His	Met	Met	Pro	His	Leu	Arg	Ile	Gly
		675					680					685			
Trp	Ala	Asn	Thr	Ser	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Lys	Lys
	690					695					700				
Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	Tyr	Ser	Phe	Gly	Phe	Asp
705					710					715					720
Gly	Ala	Phe	Leu	Trp	Thr	Gly	Gly	Arg	Lys	Thr	Leu	Val	Val	Asp	Ala
				725					730					735	
Leu	Pro	Glu	Glu	Pro	Phe	Ile	Arg	Lys	Gly	Asp	Val	Ile	Gly	Val	Ala
			740					745					750		
Ile	Asp	Leu	Ser	Val	Pro	Ile	Ile	Thr	Phe	Thr	Phe	Asn	Gly	Val	Lys
		755					760					765			
Val	Arg	Gly	Ser	Phe	Arg	Asp	Phe	Asn	Leu	Asp	Gly	Met	Phe	Phe	Pro
	770					775					780				
Val	Met	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys	Arg	Phe	Leu	Phe	Gly	Gly
785					790					795					800
Asp	His	Gly	Arg	Leu	Lys	Phe	Ala	Pro	Pro	Met	Gly	Phe	Ser	Ala	Leu
				805					810					815	
Val	Gln	Cys	Leu	Met	Pro	Gln	Gln	Ile	Leu	Ser	Leu	Asp	Pro	Cys	Phe
			820					825					830		
Tyr	Phe	Gly	Asn	Leu	Ala	Lys	Asn	Val	Leu	Ala	Gly	Pro	Trp	Leu	Ile
		835					840					845			
Glu	Asp	Asp	Thr	Ala	Phe	Val	Pro	Lys	Pro	Val	Asp	Thr	Thr	Gly	Val
	850					855					860				
Thr	Leu	Pro	Ser	Ser	Val	Asp	Gln	Ile	Lys	Glu	Lys	Leu	Ala	Glu	Asn
865					870					875					880
Ile	His	Glu	Met	Trp	Ala	Leu	Asn	Lys	Ile	Glu	Ala	Gly	Trp	Ser	Trp
				885					890					895	
Gly	Glu	His	Arg	Asp	Asp	Tyr	His	Arg	Ile	His	Pro	Cys	Leu	Thr	His

900					905					910						
Phe	Glu	Lys	Leu	Pro	Ala	Ala	Glu	Lys	Arg	Tyr	Asp	Asn	Gln	Leu	Ala	
915					920					925						
Val	Gln	Thr	Leu	Lys	Thr	Ile	Ile	Ser	Leu	Gly	Tyr	Tyr	Ile	Thr	Met	
930					935					940						
Asp	Lys	Pro	Pro	Ala	Arg	Ile	Arg	Pro	Val	Arg	Leu	Pro	Asn	Glu	Ile	
945					950					955					960	
Phe	Met	Gln	Gly	Asn	Gly	Tyr	Lys	Pro	Ala	Pro	Leu	Asp	Leu	Ser	Ala	
965					970					975						
Val	Thr	Leu	Thr	Pro	Lys	Leu	Glu	Glu	Leu	Val	Asp	Gln	Leu	Ala	Glu	
980					985					990						
Asn	Thr	His	Asn	Leu	Trp	Ala	Arg	Glu	Arg	Ile	Gln	Gln	Gly	Trp	Thr	
995					1000					1005						
Tyr	Gly	Leu	Asn	Glu	Asp	Ser	Glu	Asn	His	Arg	Ser	Pro	His	Leu		
1010					1015					1020						
Val	Pro	Tyr	Ala	Lys	Val	Asp	Glu	Ala	Ile	Lys	Lys	Ala	Asn	Arg		
1025					1030					1035						
Asp	Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr	Leu	Leu	Val	Tyr	Gly	Tyr		
1040					1045					1050						
Val	Leu	Asp	Pro	Pro	Thr	Gly	Glu	Gly	Thr	Glu	Ala	Leu	Leu	Ala		
1055					1060					1065						
Glu	Ala	Gln	Arg	Leu	Lys	Phe	Ala	Gly	Phe	Arg	Thr	Tyr	Arg	Val		
1070					1075					1080						
Glu	Arg	Asn	Tyr	Ala	Val	Thr	Ser	Gly	Lys	Trp	Tyr	Phe	Glu	Phe		
1085					1090					1095						
Glu	Val	Leu	Thr	Ser	Gly	Pro	Met	Arg	Val	Gly	Trp	Ala	Arg	Ala		
1100					1105					1110						
Asp	Cys	Tyr	Pro	Gly	Ala	Met	Leu	Gly	Ser	Glu	Asp	Thr	Ser	Trp		
1115					1120					1125						
Ala	Phe	Asp	Gly	His	Asn	Glu	Glu	Lys	Val	Tyr	Gly	Gly	Val	Ser		
1130					1135					1140						
Glu	Ser	Phe	Gly	Lys	Gln	Cys	Gly	Pro	Gly	Asp	Ile	Val	Gly	Val		
1145					1150					1155						
Phe	Leu	Asp	Leu	Ala	Asp	His	Thr	Ile	Ser	Phe	Ser	Leu	Asn	Gly		
1160					1165					1170						
Glu	Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ala	Asp		
1175					1180					1185						
Val	Thr	Ala	Glu	Gly	Val	Gly	Phe	Val	Pro	Ala	Cys	Thr	Leu	Gly		
1190					1195					1200						
Val	Gly	Gln	Lys	Ala	Arg	Leu	Ile	Tyr	Gly	Gln	Asp	Val	Asp	Ser		

1205		1210		1215
Leu Lys Phe Phe Thr Thr Cys Gly Leu Gln Glu Gly Tyr Glu Pro				
1220		1225		1230
Phe Cys Val Asn Met Arg Arg Pro Val Thr His Trp Tyr Thr Lys				
1235		1240		1245
Asp Gln Pro Ile Phe Glu Asn Thr Glu Glu Met Pro Asp Cys Arg				
1250		1255		1260
Ile Asp Val Thr Arg Ile Pro Gly Gly Ala Asp Thr Pro Pro His				
1265		1270		1275
Leu Lys Ile Ser His Asn Thr Phe Glu Thr Met Glu Lys Ala Asn				
1280		1285		1290
Trp Glu Phe Leu Arg Leu Ser Leu Pro Val Thr Cys Met Gly Glu				
1295		1300		1305
Phe Ile Ser Glu Gln Glu Lys Ala Arg Arg Trp Asp Glu Ile Lys				
1310		1315		1320
Asn Arg Gln Tyr Arg Leu Met Arg Glu Ala Glu Ile Ala Ala Gln				
1325		1330		1335
Met Gln Val Gln Thr Gln Ala Ala His Met Asp His Met Leu Lys				
1340		1345		1350
Gly Gly Phe Asn Met Asn Asp Ile Lys Gly Leu Thr Arg Asn Phe				
1355		1360		1365
Asp Glu His Ala Asp Ala Glu Ala Asp His Met Met Arg Gly Pro				
1370		1375		1380
Asn Arg Pro Pro Arg Lys Gly Ser Leu Thr Arg Asn Ile Thr Phe				
1385		1390		1395
Glu Thr Asp Met Ser Ala Ala Leu Asp Glu Met Gln Arg Ser Thr				
1400		1405		1410
Ser Val Leu Asp Met Asn Gly Leu Gly Glu Glu Met Asp Asp Lys				
1415		1420		1425
Lys Lys Arg Gly Arg Ser Pro Phe Lys Phe Phe Ser Lys Lys Ser				
1430		1435		1440
Arg Asp Gln Ser Arg Glu Lys Met Gly Ala Arg Thr Leu Asp Thr				
1445		1450		1455
Ser Leu Glu Arg Arg Asn Thr Val Ala His Gly Arg Asn Val Val				
1460		1465		1470
Asn Gln Gln Met Thr Thr Arg Ala Pro Thr Leu Arg Leu Asn Asn				
1475		1480		1485
Ala Glu Ile Pro Pro Ser Pro Val Pro Gln Gly Pro Lys Gln Leu				
1490		1495		1500
Ser Gly Ser Asn Leu Gly Gln Gln Pro Val Glu Thr Ser Gly Asp				



1505		1510		1515
Glu Met Phe Asp Ala Glu Cys Leu Lys Leu Ile Asn Glu Tyr Phe				
1520		1525		1530
Tyr Gly Val Arg Ile Phe Pro Gly Gln Asp Pro Thr His Val Tyr				
1535		1540		1545
Val Gly Trp Val Thr Thr Gln Tyr His Leu His Ser Arg Glu Phe				
1550		1555		1560
Asn Lys Asn Lys Val Arg Arg Gly Ser Val Tyr Ile Glu Asp Asp				
1565		1570		1575
Tyr Glu Met Ala Ile Glu Arg Ile Asp Arg Gln Ser Cys Tyr Val				
1580		1585		1590
Val Arg Ala Asp Glu Leu Phe Asn Glu Val Thr Gln Asp Ala Ser				
1595		1600		1605
Gly Lys Gly Ala Ser Gln Gly Met Phe Val Gly Cys Phe Val Asp				
1610		1615		1620
Thr Ala Thr Gly Ile Ile Arg Phe Thr Cys Glu Gly Lys Asp Thr				
1625		1630		1635
Ser His Arg Trp Met Met Glu Pro Asp Thr Lys Leu Phe Pro Ala				
1640		1645		1650
Ile Phe Val Glu Ala Thr Ser Lys Glu Ile Leu Gln Ile Glu Leu				
1655		1660		1665
Gly Arg Thr Pro Thr Thr Leu Pro Leu Ser Ala Ala Val Leu Pro				
1670		1675		1680
Thr Ser Asp Lys His Ile Asn Pro Gln Ser Pro Pro Arg Leu Lys				
1685		1690		1695
Val Gln Cys Leu Arg Pro His Gln Trp Ala Arg Val Pro Asn Thr				
1700		1705		1710
Ala Leu Gln Val His Ala Leu Lys Leu Ser Asp Val Arg Gly Trp				
1715		1720		1725
Ser Met Leu Cys Glu Asp Pro Val Ser Met Leu Ala Leu His Ile				
1730		1735		1740
Pro Glu Glu Asp Arg Cys Ile Asp Ile Leu Glu Leu Ile Glu Met				
1745		1750		1755
Asp Lys Leu Leu Ser Phe His Ala His Ser Leu Thr Leu Tyr Ala				
1760		1765		1770
Ala Leu Cys Tyr Gln Ser Asn Tyr Arg Ala Ala His Ala Leu Cys				
1775		1780		1785
Gln His Val Asp Gln Lys Gln Leu Leu Tyr Ala Ile Arg Ser Glu				
1790		1795		1800
Tyr Met Ser Gly Pro Leu Arg Gln Gly Phe Tyr Asp Leu Leu Ile				

1805		1810		1815
Ala Leu His Leu Glu Ser	His	Ala Thr Thr Met	Glu	Val Cys Lys
1820	1825		1830	
Asn Glu Tyr Ile Thr Pro	Leu	Gly Ala Glu Leu	Lys	Glu Leu Tyr
1835	1840		1845	
Ser Asp Glu Glu Met Gln	His	Ser Leu Arg Ser	Leu	Val Thr Glu
1850	1855		1860	
Ser Val Arg Pro Gln Leu	Arg	Met Thr Glu Ile	Thr	Pro Pro Val
1865	1870		1875	
Ile Ala Thr Ser Ser Met	Pro	Ser Val Ser Ser	Glu	Pro Ile Pro
1880	1885		1890	
Asp Ile Asp Gln Leu Tyr	Ser	Pro Lys Phe Pro	Leu	Glu Val Val
1895	1900		1905	
Arg Gln Phe Val Met Glu	Ala	Leu Lys Asp Ala	Val	Glu Ile Asn
1910	1915		1920	
Gln Val His Asn Arg Asp	Pro	Ile Gly Trp Thr	Asn	Glu Asn Leu
1925	1930		1935	
Phe Leu Pro Leu Ile Lys	Leu	Thr Asp Arg Leu	Leu	Leu Val Gly
1940	1945		1950	
Val Leu Thr Asp Glu Asp	Val	Gln Arg Leu Leu	Val	Met Ile Asp
1955	1960		1965	
Pro Glu Thr Trp Asp Gln	Ala	Phe Glu Arg Glu	Gly	Lys Asp Glu
1970	1975		1980	
His Arg Lys Gly Leu Leu	Thr	Met Lys Met Ala	Glu	Gly Ala Lys
1985	1990		1995	
Leu Gln Met Cys Tyr Leu	Leu	His His Leu Tyr	Asp	Thr Gln Leu
2000	2005		2010	
Arg His Arg Val Glu Ser	Ile	Ile Ala Phe Ser	His	Asp Phe Val
2015	2020		2025	
Gly Asp Leu Gln Thr Asp	Gln	Leu Arg Arg Tyr	Ile	Glu Ile Lys
2030	2035		2040	
Gln Ser Asp Leu Pro Ser	Ala	Val Ala Ala Lys	Lys	Thr Lys Glu
2045	2050		2055	
Phe Arg Cys Pro Pro Arg	Glu	Gln Met Asn Gln	Ile	Leu Cys Phe
2060	2065		2070	
Lys Asn Leu Glu Pro Asp	Asp	Gln Asp Asn Cys	Thr	Cys Gly Leu
2075	2080		2085	
Glu Leu Arg Gly Arg Leu	Gly	Asp Phe His Asp	Ser	Leu Met Gln
2090	2095		2100	
Lys Val Ser Leu Asn Ala	Leu	Gln Glu Pro Asp	Gly	Val Glu Gly

2105		2110		2115
Thr Ala Ile Glu Glu Val	Lys	Thr Gly Pro Ile	Thr	Lys Ile Tyr
2120	2125		2130	
Asn Phe Ile Asn Thr Val	Lys	Glu Leu Glu Glu	Gly	Pro Lys Glu
2135	2140		2145	
Val Glu Glu Pro Glu Lys	Lys	Thr Pro Glu Glu	Val	Phe Arg Lys
2150	2155		2160	
Val Leu Ile Lys Thr Ile	Val	Ser Trp Ala Glu	Glu	Ser Gln Ile
2165	2170		2175	
Glu Asn Pro Lys Leu Val	Arg	Glu Met Phe Ser	Leu	Leu Leu Arg
2180	2185		2190	
Gln Tyr Asp Thr Val Gly	Glu	Leu Val Arg Ala	Leu	Glu Lys Thr
2195	2200		2205	
Tyr Val Ile Asn Thr Arg	Ala	Arg Asp Asp Val	Ala	Glu Met Trp
2210	2215		2220	
Val Gly Leu Ser Gln Ile	Arg	Ala Leu Leu Pro	Val	Gln Met Ser
2225	2230		2235	
Gln Glu Glu Glu Glu Leu	Met	Arg Lys Arg Leu	Trp	Lys Leu Val
2240	2245		2250	
Asn Asn Ala Thr Phe Phe	Gln	His Pro Asp Leu	Ile	Arg Ile Leu
2255	2260		2265	
Arg Val His Glu Asn Val	Met	Ala Val Met Met	Asn	Thr Leu Gly
2270	2275		2280	
Arg Arg Ala Gln Ala Gln	Ser	Asp Ala Pro Thr	Gln	Ser Glu Val
2285	2290		2295	
Ala Glu Gly Ala Pro Ser	Lys	Glu Lys Asp Thr	Ser	His Glu Met
2300	2305		2310	
Val Val Ala Cys Cys Arg	Phe	Leu Cys Tyr Phe	Cys	Arg Thr Gly
2315	2320		2325	
Arg Gln Asn Gln Lys Ala	Met	Phe Asp His Phe	Asp	Phe Leu Leu
2330	2335		2340	
Asp Asn Ala Asn Ile Leu	Leu	Ala Arg Pro Ser	Leu	Arg Gly Ser
2345	2350		2355	
Thr Pro Leu Asp Val Ala	Tyr	Ser Ser Leu Met	Glu	Asn Thr Glu
2360	2365		2370	
Leu Ala Leu Ala Leu Arg	Glu	His Tyr Leu Glu	Lys	Ile Ala Val
2375	2380		2385	
Tyr Leu Ser Arg Cys Gly	Leu	Gln Ser Asn Ser	Glu	Leu Val Glu
2390	2395		2400	
Lys Gly Tyr Pro Asp Leu	Gly	Trp Asp Pro Val	Glu	Gly Glu Arg

2405	2410	2415
Tyr Leu Asp Phe Leu Arg	Tyr Cys Val Trp Val	Asn Gly Glu Ser
2420	2425	2430
Val Glu Glu Asn Ala Asn	Leu Val Ile Arg Leu	Leu Ile Arg Arg
2435	2440	2445
Pro Glu Cys Leu Gly Pro	Ala Leu Arg Gly Glu	Gly Glu Gly Leu
2450	2455	2460
Phe Arg Ala Ile Val Glu	Ala Asn Arg Met Ser	Glu Arg Ile Ser
2465	2470	2475
Asp Arg Cys Lys Met Gln	Asp Glu Ala Glu Gly	Thr Ile Ala Gly
2480	2485	2490
Leu Asn Phe Thr His Pro	Leu Pro Glu Gly Glu	Glu Asp Glu Asp
2495	2500	2505
Tyr Ile Asp Thr Gly Ala	Ala Ile Leu Asn Phe	Tyr Cys Thr Leu
2510	2515	2520
Val Asp Leu Leu Gly Arg	Cys Ala Pro Asp Ala	Ser Val Ile Glu
2525	2530	2535
Gln Gly Lys Asn Glu Ser	Leu Arg Ala Arg Ala	Ile Leu Arg Ser
2540	2545	2550
Leu Val Pro Leu Glu Asp	Leu Gln Gly Val Leu	Ser Leu Lys Phe
2555	2560	2565
Thr Leu Ser Gln Thr Ala	Pro Gly Glu Glu Lys	Pro Lys Ser Asp
2570	2575	2580
Met Pro Ser Gly Leu Leu	Pro Asn Asn Lys Gln	Ser Ile Val Leu
2585	2590	2595
Phe Leu Glu Arg Val Tyr	Gly Ile Glu Ala Gln	Asp Leu Phe Tyr
2600	2605	2610
Arg Leu Leu Glu Asp Ala	Phe Leu Pro Asp Leu	Arg Thr Ala Thr
2615	2620	2625
Ile Leu Asp Lys Ser Asp	Gly Ser Glu Ser Asp	Met Ala Leu Ala
2630	2635	2640
Met Asn Arg Tyr Ile Gly	Asn Ser Ile Leu Pro	Leu Leu Ile Lys
2645	2650	2655
His Ser Lys Phe Tyr Asn	Glu Ala Glu Asn Tyr	Ala Ser Leu Leu
2660	2665	2670
Asp Ala Thr Leu His Thr	Val Tyr Arg Leu Ser	Lys Asn Arg Met
2675	2680	2685
Leu Thr Lys Gly Gln Arg	Glu Ala Val Ser Asp	Phe Leu Val Ala
2690	2695	2700
Leu Thr Ser Gln Met Gln	Pro Ala Met Leu Leu	Lys Leu Leu Arg

2705		2710		2715
Lys Leu Thr Val Asp Val Ser	Lys Leu Ser Glu Tyr Thr Thr Val			
2720	2725	2730		
Ala Leu Arg Leu Leu Thr Leu	His Phe Asp Arg Cys Ala Lys Tyr			
2735	2740	2745		
Tyr Gly Ser Thr Gln Gly Gln	Gly Ser Tyr Gly Ala Ser Ser Asp			
2750	2755	2760		
Glu Glu Lys Arg Leu Thr Met	Leu Leu Phe Ser Asn Ile Phe Asp			
2765	2770	2775		
Ser Leu Ser Asn Met Asp Tyr	Asp Pro Glu Leu Phe Gly Lys Ala			
2780	2785	2790		
Leu Pro Cys Leu Ile Ala Ile	Gly Cys Ala Leu Pro Pro Asp Tyr			
2795	2800	2805		
Ser Leu Ser Lys Asn Thr Asp	Glu Asp Tyr Tyr Gly Arg Gln Met			
2810	2815	2820		
Gly Ala Pro Asp Gln Pro Gln	Tyr Met Pro Asn Pro Ile Asp Thr			
2825	2830	2835		
Asn Asn Val His Leu Asp Asn	Asp Leu Asn Ser Leu Val Gln Lys			
2840	2845	2850		
Phe Ser Glu His Tyr His Asp	Ala Trp Ala Ser Arg Arg Leu Glu			
2855	2860	2865		
Gly Gly Trp Thr Tyr Gly Asp	Ile Arg Ser Asp Asn Asp Arg Lys			
2870	2875	2880		
His Pro Arg Leu Lys Pro Tyr	Asn Met Leu Ser Glu Tyr Glu Arg			
2885	2890	2895		
Glu Arg Tyr Arg Asp Pro Val	Arg Glu Cys Leu Lys Gly Leu Leu			
2900	2905	2910		
Ala Ile Gly Trp Thr Val Glu	His Ser Glu Val Glu Val Ala Leu			
2915	2920	2925		
Asn His Arg Gly Ser Thr Arg	Arg Gln Ser Lys Pro Gln Ile Asn			
2930	2935	2940		
Glu Phe Gln Asn Glu Gly Ser	Pro Phe Asn Tyr Asn Pro His Pro			
2945	2950	2955		
Val Asp Met Ser Asn Leu Thr	Leu Ser Arg Glu Met Gln Asn Met			
2960	2965	2970		
Ala Glu Arg Leu Ala Glu Asn	Ser His Asp Ile Trp Ala Lys Lys			
2975	2980	2985		
Lys Asn Glu Glu Leu Asn Gly	Cys Gly Gly Val Ile His Pro Gln			
2990	2995	3000		
Leu Val Pro Tyr Asp Leu Leu	Thr Asp Lys Glu Lys Lys Lys Asp			

3005	3010	3015
Arg Glu Arg Ser Gln Glu Phe Leu Lys Tyr Met Gln Tyr Gln Gly		
3020	3025	3030
Tyr Lys Leu His Lys Pro Ser Lys Gly Gly Ala Val Glu Glu Gly		
3035	3040	3045
Gly Ala Thr Gln Ala Ala Val Glu Leu Arg Phe Ser Tyr Ser Leu		
3050	3055	3060
Leu Glu Lys Leu Ile Gln Tyr Leu Asp Arg Ala Thr Ile Asn Met		
3065	3070	3075
Lys Leu Leu Lys Pro Ser Thr Thr Phe Ser Arg Arg Ser Ser Phe		
3080	3085	3090
Lys Thr Ala Thr Arg Asp Ile Lys Phe Phe Ser Lys Val Val Leu		
3095	3100	3105
Pro Leu Met Glu Lys Tyr Phe Ser Thr His Arg Asn Tyr Phe Ile		
3110	3115	3120
Ala Ile Ala Thr Ala Thr Asn Asn Ile Gly Ala Ala Ser Leu Lys		
3125	3130	3135
Glu Lys Glu Met Val Ala Ser Ile Phe Cys Lys Leu Ala Ala Leu		
3140	3145	3150
Leu Arg Asn Arg Leu Ser Ala Phe Gly Pro Asp Val Arg Ile Thr		
3155	3160	3165
Val Arg Cys Leu Gln Val Leu Val Lys Gly Ile Asp Ala Arg Thr		
3170	3175	3180
Leu Thr Lys Asn Cys Pro Glu Phe Ile Arg Thr Ser Met Leu Thr		
3185	3190	3195
Phe Phe Asn Gln Thr Ser Asp Asp Leu Gly Asn Thr Ile Leu Asn		
3200	3205	3210
Leu Gln Asp Gly Lys Tyr Ser His Leu Arg Gly Thr His Leu Lys		
3215	3220	3225
Thr Ser Thr Ser Leu Gly Tyr Val Asn Gln Val Val Leu Pro Val		
3230	3235	3240
Leu Thr Ala Met Phe Asp His Leu Ala Ala Cys Asp Tyr Gly Ser		
3245	3250	3255
Asp Leu Leu Leu Asp Glu Ile Gln Val Ala Ser Tyr Lys Ile Leu		
3260	3265	3270
Ala Ala Leu Tyr His Leu Gly Thr Asp Gly Thr Leu Thr His Asp		
3275	3280	3285
Arg Lys Tyr Leu Lys Thr Glu Ile Glu Arg His Arg Pro Ala Leu		
3290	3295	3300
Gly Ser Cys Leu Gly Ala Tyr Ser Ser Cys Phe Pro Val Ala Phe		

3305	3310	3315
Leu Glu Pro His Leu Asn Lys His Asn Gln Tyr Ser Leu Leu Asn		
3320	3325	3330
Arg Ile Ala Asp His Ser Leu Glu Ala Gln Asp Ile Met Val Lys		
3335	3340	3345
Met Glu Ser Cys Met Pro Asn Leu Glu Thr Ile Leu Ala Glu Val		
3350	3355	3360
Asp Gln Phe Val Glu Ser Asp Lys Thr Tyr Asn Asp Ala Pro His		
3365	3370	3375
Ile Ile Asp Val Ile Leu Pro Leu Leu Cys Ala Tyr Leu Pro Phe		
3380	3385	3390
Trp Trp Ser Gln Gly Pro Asp Asn Val Ser Pro Thr Ser Gly Asn		
3395	3400	3405
His Val Thr Met Val Thr Ala Asp His Met Asn Pro Leu Leu Arg		
3410	3415	3420
Asn Val Leu Lys Met Ile Lys Lys Asn Ile Gly Asn Asp Asn Ala		
3425	3430	3435
Pro Trp Met Thr Arg Ile Ala Ala Tyr Thr Gln Gln Ile Ile Ile		
3440	3445	3450
Asn Thr Ser Glu Glu Leu Leu Lys Asp Pro Phe Leu Pro Leu Ala		
3455	3460	3465
Glu Arg Val Lys Lys Arg Thr Glu Asn Met Leu His Lys Glu Asp		
3470	3475	3480
Ser Met Arg Gly Phe Ile Lys Ser Ala Thr Asp Asp Thr Ser Gln		
3485	3490	3495
Val Glu Thr Gln Leu Gln Glu Asp Trp Asn Leu Leu Val Arg Asp		
3500	3505	3510
Ile Tyr Ser Phe Tyr Pro Leu Leu Ile Lys Tyr Val Asp Leu Gln		
3515	3520	3525
Arg Asn His Trp Leu Lys Asp Asn Ile Pro Glu Ala Glu Glu Leu		
3530	3535	3540
Tyr Asn His Val Ala Glu Ile Phe Asn Ile Trp Ser Lys Ser Gln		
3545	3550	3555
Tyr Phe Leu Lys Glu Glu Gln Asn Phe Ile Ser Ala Asn Glu Ile		
3560	3565	3570
Asp Asn Met Ala Leu Ile Met Pro Thr Ala Thr Arg Arg Ser Ala		
3575	3580	3585
Ile Ser Glu Gly Ala Pro Ala Val Gly Gly Lys Val Lys Lys Lys		
3590	3595	3600
Lys Lys Asn Arg Asp Lys Lys Arg Asp Lys Asp Lys Glu Val Gln		

3605	3610	3615
Ala Ser Leu Met Val	Ala Cys Leu Lys Arg	Leu Leu Pro Val Gly
3620	3625	3630
Leu Asn Leu Phe Ala Gly	Arg Glu Gln Glu Leu	Val Gln His Cys
3635	3640	3645
Lys Asp Arg Tyr Leu Lys	Lys Met Pro Glu Tyr	Asp Val Ile Glu
3650	3655	3660
Phe Ala Arg Asn Gln Leu	Thr Leu Pro Asp Lys	Leu Asp Pro Ser
3665	3670	3675
Asp Glu Met Ser Trp Gln	His Tyr Leu Tyr Ser	Lys Leu Gly Lys
3680	3685	3690
Thr Glu Glu Pro Val Asp	Glu Gln Ala Leu Glu	Lys Ala Asn Val
3695	3700	3705
Asn Ser Asn Glu Lys Gly	Lys Asp Lys Thr Gln	Glu Thr Val Asp
3710	3715	3720
Arg Ile Val Ala Met Ala	Lys Val Leu Phe Gly	Leu His Met Ile
3725	3730	3735
Asp His Pro Gln Gln Gln	Ser Lys Asn Val Tyr	Arg Ser Val Val
3740	3745	3750
Ser Ile Gln Arg Lys Arg	Ala Val Ile Ala Cys	Phe Arg Gln Thr
3755	3760	3765
Ser Leu His Ser Leu Pro	Arg His Arg Ala Cys	Asn Ile Phe Ala
3770	3775	3780
Arg Ser Tyr Tyr Glu Gln	Trp Leu Gln Glu Glu	Asn Val Gly Gln
3785	3790	3795
Glu Val Met Val Glu Asp	Leu Thr Gln Thr Phe	Glu Asp Ser Glu
3800	3805	3810
Lys Ser Lys Lys Glu Gly	Glu Glu Thr Asp Ser	Lys Pro Asp Pro
3815	3820	3825
Leu Thr Gln Leu Val Thr	Thr Phe Cys Arg Gly	Ala Met Thr Glu
3830	3835	3840
Arg Ser Gly Ala Leu Gln	Glu Asp Leu Leu Tyr	Met Ser Tyr Ala
3845	3850	3855
Gln Ile Ala Ala Lys Ser	Thr Gly Lys Glu Glu	Glu Glu Gly Gly
3860	3865	3870
Asp Glu Glu Gly Gly Glu	Gly Gly Glu Glu Gly	Glu Gly Thr Ser
3875	3880	3885
Ile His Glu Gln Glu Met	Glu Lys Gln Lys Leu	Leu Phe His Gln
3890	3895	3900
Ala Arg Leu Ser Asn Arg	Gly Val Ala Glu Met	Val Leu Leu His



3905						3910						3915				
Ile Ser Ala Ser Lys Gly	Ile Pro Ser Glu Met Val Met Thr Thr															
3920	3925											3930				
Leu Asn Leu Gly Ile Ala	Ile Leu Arg Gly Gly Asn Ile Asp Ile											3945				
3935	3940															
Gln Met Gly Met Leu Asn His	Leu Lys Glu Lys Lys Asp Val Gly											3960				
3950	3955															
Phe Phe Thr Ser Ile Ala Gly	Leu Met Asn Ser Cys Ser Val Leu											3975				
3965	3970															
Asp Leu Asp Ala Phe Glu Arg	Asn Thr Lys Ala Glu Gly Leu Gly											3990				
3980	3985															
Val Gly Ser Glu Gly Ala Ala	Gly Glu Lys Asn Met His Asp Ala											4005				
3995	4000															
Glu Phe Thr Cys Ala Leu Phe	Arg Phe Ile Gln Leu Thr Cys Glu											4020				
4010	4015															
Gly His Asn Leu Glu Trp Gln	Asn Tyr Leu Arg Thr Gln Ala Gly											4035				
4025	4030															
Asn Thr Thr Thr Val Asn Val	Val Ile Cys Thr Val Asp Tyr Leu											4050				
4040	4045															
Leu Arg Leu Gln Glu Ser Ile	Met Asp Phe Tyr Trp His Tyr Ser											4065				
4055	4060															
Ser Lys Glu Ile Ile Asp Pro	Ala Gly Lys Ala Asn Phe Phe Lys											4080				
4070	4075															
Ala Ile Glu Val Ala Ser Gln	Val Phe Asn Thr Leu Thr Glu Val											4095				
4085	4090															
Ile Gln Gly Pro Cys Thr Leu	Asn Gln Gln Ala Leu Ala His Ser											4110				
4100	4105															
Arg Leu Trp Asp Ala Val Gly	Gly Phe Leu Phe Leu Phe Ser His											4125				
4115	4120															
Met Gln Asp Lys Leu Ser Lys	His Ser Ser Gln Val Asp Leu Leu											4140				
4130	4135															
Lys Glu Leu Leu Asn Leu Gln	Lys Asp Met Ile Thr Met Met Leu											4155				
4145	4150															
Ser Met Leu Glu Gly Asn Val	Val Asn Gly Thr Ile Gly Lys Gln											4170				
4160	4165															
Met Val Asp Thr Leu Val Glu	Ser Ala Ser Asn Val Glu Leu Ile											4185				
4175	4180															
Leu Lys Tyr Phe Asp Met Phe	Leu Lys Leu Ala Asp Leu Ile Glu											4200				
4190	4195															
Ser Pro Ser Phe His Glu Val	Asp Met Lys Asn Glu Gly Trp Val															

4205	4210	4215
Thr Pro Lys Asp Phe Arg Glu	Lys Met Glu Gln Ser	Lys Asn Tyr
4220	4225	4230
Thr Pro Glu Glu Met Asp Phe	Leu Leu Ala Cys Cys	Glu Arg Asn
4235	4240	4245
His Glu Gly Lys Ile Asp Tyr	Arg Ala Phe Val Glu	His Phe His
4250	4255	4260
Glu Pro Ser Lys Glu Ile Gly	Phe Asn Leu Ala Val	Leu Leu Thr
4265	4270	4275
Asn Leu Ser Glu His Met Pro	Asn Glu Pro Arg Leu	Ala Arg Phe
4280	4285	4290
Leu Glu Thr Ala Gly Ser Val	Leu Asn Tyr Phe Glu	Pro Phe Leu
4295	4300	4305
Gly Arg Ile Glu Ile Leu Gly	Ser Ser Lys Arg Ile	Glu Arg Val
4310	4315	4320
Tyr Phe Glu Ile Lys Asp Ser	Asn Ile Glu Gln Trp	Glu Lys Pro
4325	4330	4335
Gln Ile Arg Glu Ser Lys Arg	Ala Phe Phe Tyr Ser	Ile Val Thr
4340	4345	4350
Glu Gly Gly Asp Lys Glu Lys	Leu Glu Ala Phe Val	Asn Phe Cys
4355	4360	4365
Glu Asp Ala Ile Phe Glu Met	Thr His Ala Ser Gly	Leu Met Ala
4370	4375	4380
Thr Asp Asp Gly Gly Gly Asn	Val Lys Arg Asp Thr	Ala Tyr Ser
4385	4390	4395
Ser Tyr Met Ser Glu Glu Glu	Glu Glu Arg Ala Ala	Arg Asp Pro
4400	4405	4410
Ile Arg Arg Thr Ile Thr Ala	Val Lys Glu Gly Leu	Lys Phe Gly
4415	4420	4425
Val His Met Leu Ser Pro Ala	Asn Ile Lys His Gln	Ile Gly Val
4430	4435	4440
Met Gln Thr Lys Ser Ile Pro	Glu Leu Ile Val Gly	Phe Phe Lys
4445	4450	4455
Ile Ile Phe Tyr Ile Phe Tyr	Tyr Thr Gly Tyr Ala	His Phe Cys
4460	4465	4470
Val Val Arg Tyr Ile Phe Gly	Ile Leu Leu Asn Leu	Met Arg Gly
4475	4480	4485
Pro Ala Pro Glu Gln Glu Glu	Glu Pro Val Val Glu	Glu Glu Thr
4490	4495	4500
Phe Gly Arg Ala Leu Pro Pro	Leu Pro Leu Glu Glu	Pro Pro Gly

4505	4510	4515
Thr Val Gln Ala Phe Gly Leu Asp Ile Asn Lys Glu Glu Asn Gly		
4520	4525	4530
Met Tyr Lys Val Val Val His Glu Ser Pro Ala Asn Ser Ser Met		
4535	4540	4545
Glu Glu Gly Gly Glu Ser Ser Pro Glu Asp Gly Ala Ala Ala Ser		
4550	4555	4560
Gly Glu Leu Val Glu Gly Glu Pro His Gln Glu Pro Ile Ser Ile		
4565	4570	4575
Val Asp Leu Leu Gly Gly Glu Ala Ala Lys Lys Ala Ala Gln Glu		
4580	4585	4590
Arg Gln Glu Ala Gln Lys Ala Gln Glu Ala Ala Met Ala Ser Ile		
4595	4600	4605
Glu Ala Glu Ala Lys Lys Ser Ser Ser Ala Pro Gln Glu Thr Pro		
4610	4615	4620
Ala Val His Gln Ile Asp Phe Ser Gln Tyr Thr His Arg Ala Val		
4625	4630	4635
Ser Phe Leu Ala Arg Asn Phe Tyr Asn Leu Lys Tyr Val Ala Leu		
4640	4645	4650
Val Leu Ala Phe Ser Ile Asn Phe Met Leu Leu Phe Tyr Lys Val		
4655	4660	4665
Thr Ser Phe Thr Glu Glu Ala Asp Ser Ser Ala Glu Glu Glu Leu		
4670	4675	4680
Ile Leu Gly Ser Gly Ser Gly Gly Gly Ala Asp Ile Thr Gly Ser		
4685	4690	4695
Gly Phe Gly Gly Ser Gly Asp Gly Gly Ser Gly Asp Gly Glu Met		
4700	4705	4710
Glu Asp Glu Ile Pro Glu Leu Val His Val Asp Glu Asp Phe Phe		
4715	4720	4725
Tyr Met Glu His Val Leu Arg Ile Ala Ala Cys Leu His Ser Leu		
4730	4735	4740
Val Ser Leu Ala Met Leu Ile Ala Tyr Tyr His Leu Lys Val Pro		
4745	4750	4755
Leu Ala Ile Phe Lys Arg Glu Lys Glu Ile Ala Arg Arg Leu Glu		
4760	4765	4770
Phe Glu Gly Leu Phe Ile Ala Glu Gln Pro Glu Asp Asp Asp Phe		
4775	4780	4785
Lys Ser His Trp Asp Lys Leu Val Ile Ser Ala Lys Ser Phe Pro		
4790	4795	4800
Val Asn Tyr Trp Asp Lys Phe Val Lys Lys Lys Val Arg Gln Lys		

4805	4810	4815
Tyr Ser Glu Thr Tyr Asp Phe	Asp Ser Ile Ser Asn	Leu Leu Gly
4820	4825	4830
Met Glu Lys Ser Thr Phe Ala	Ala Gln Glu Ser Glu	Glu Thr Gly
4835	4840	4845
Ile Phe Lys Tyr Ile Met Asn	Ile Asp Trp Arg Tyr	Gln Val Trp
4850	4855	4860
Lys Ala Gly Val Thr Phe Thr	Asp Asn Ala Phe Leu	Tyr Ser Leu
4865	4870	4875
Trp Tyr Phe Ser Phe Ser Val	Met Gly Asn Phe Asn	Asn Phe Phe
4880	4885	4890
Phe Ala Ala His Leu Leu Asp	Val Ala Val Gly Phe	Lys Thr Leu
4895	4900	4905
Arg Thr Ile Leu Gln Ser Val	Thr His Asn Gly Lys	Gln Leu Val
4910	4915	4920
Leu Thr Val Met Leu Leu Thr	Ile Ile Val Tyr Ile	Tyr Thr Val
4925	4930	4935
Ile Ala Phe Asn Phe Phe Arg	Lys Phe Tyr Ile Gln	Glu Glu Asp
4940	4945	4950
Glu Glu Val Asp Lys Lys Cys	His Asp Met Leu Thr	Cys Phe Val
4955	4960	4965
Phe His Leu Tyr Lys Gly Val	Arg Ala Gly Gly Gly	Ile Gly Asp
4970	4975	4980
Glu Ile Gly Asp Pro Asp Gly	Asp Asp Tyr Glu Val	Tyr Arg Ile
4985	4990	4995
Ile Phe Asp Ile Thr Phe Phe	Phe Phe Val Ile Ile	Ile Leu Leu
5000	5005	5010
Ala Ile Ile Gln Gly Leu Ile	Ile Asp Ala Phe Gly	Glu Leu Arg
5015	5020	5025
Asp Gln Leu Glu Ser Val Lys	Asp Asn Met Glu Ser	Asn Cys Phe
5030	5035	5040
Ile Cys Gly Met Gly Lys Asp	Phe Phe Asp Ile Val	Pro His Gly
5045	5050	5055
Phe Asp Thr His Val Gln Lys	Glu His Asn Leu Ala	Asn Tyr Met
5060	5065	5070
Phe Phe Leu Met His Leu Ile	Asn Lys Pro Asp Thr	Glu Tyr Thr
5075	5080	5085
Gly Gln Glu Thr Tyr Val Trp	Asn Met Tyr Gln Gln	Arg Ser Trp
5090	5095	5100
Asp Phe Phe Pro Val Gly Asp	Cys Phe Arg Lys Gln	Tyr Glu Asp

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 Glu Leu Ser Gly Gly Gly Gly Gly Gly  
 5120                      5125

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<220>  
 <223> gi 2160475

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 Arg Thr Glu Asp Met Val Thr Leu Ser Cys Thr Ala Thr Gly Glu Arg  
                     20                      25                      30  
 Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu  
                     35                      40                      45  
 Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe  
                     50                      55                      60  
 Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65                      70                      75                      80  
 Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
                     85                      90                      95  
 Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met  
                     100                      105                      110  
 Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
                     115                      120                      125  
 Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
 130                      135                      140  
 Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
 145                      150                      155                      160  
 Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His  
                     165                      170                      175  
 Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val  
                     180                      185                      190  
 Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys  
                     195                      200                      205  
 Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly  
                     210                      215                      220  
 Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Gly Arg Glu Ala Gly  
 225                      230                      235                      240

Gln Asn Ile Val Ile Tyr Glu Gly Gly Val Val Met Ala Gln Ala Arg  
 245 250 255  
 Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Thr Gly Gly Phe  
 260 265 270  
 Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Ile Thr Thr Gly Arg  
 275 280 285  
 Tyr Leu Gly Val Asn Asp Ser Asn Glu Leu Ile Leu Val Lys Lys Glu  
 290 295 300  
 Glu Ala Ser Ile Ala Thr Thr Thr Phe Ser Trp Gln Glu Lys Asp Asp  
 305 310 315 320  
 Glu Lys Lys Val Leu Glu Asp Lys Asp Leu Glu Val Ile Gly Ser Pro  
 325 330 335  
 Ile Ile Lys Tyr Gly Asp Thr Thr Val Ile Val Gln His Cys Glu Thr  
 340 345 350  
 Ser Leu Trp Leu Ser Tyr Lys Ser Tyr Glu Thr Lys Lys Lys Gly Val  
 355 360 365  
 Gly Lys Val Glu Glu Lys Gln Ala Ile Leu His Glu Glu Gly Lys Met  
 370 375 380  
 Asp Asp Cys Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser Lys Thr  
 385 390 395 400  
 Ala Arg Val Ile Arg Lys Cys Ser Ser Leu Phe Thr Gln Phe Ile Thr  
 405 410 415  
 Ala Leu Glu Thr Leu Gln Ser Asn Arg Arg His Ser Ile Phe Phe Gln  
 420 425 430  
 Lys Val Asn Leu Asn Glu Met Val Met Cys Leu Glu Asp Leu Ile Asn  
 435 440 445  
 Tyr Phe Ser Gln Pro Glu Asp Asp Met Glu His Glu Glu Lys Gln Asn  
 450 455 460  
 Arg Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu Glu Gly  
 465 470 475 480  
 Val Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Ile Asn Ile Ile Thr  
 485 490 495  
 Ser Gln Gly Phe Leu Ala Ser Phe Leu Ala Gly Asp Glu Thr Gly Gln  
 500 505 510  
 Ser Trp Asp Leu Ile Ser Thr Tyr Leu Tyr Gln Leu Leu Ala Ala Ile  
 515 520 525  
 Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser Asn Arg  
 530 535 540  
 Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Ser Glu Gly  
 545 550 555 560

Ser Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro Glu  
 565 570 575  
 Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile Ser Leu  
 580 585 590  
 Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys Ser  
 595 600 605  
 Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn Ile  
 610 615 620  
 Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Leu Leu  
 625 630 635 640  
 Val Asp His Val Ala Ser Ile Arg Pro Asn Ile Phe Val Gly Arg Val  
 645 650 655  
 Asp Gly Ser Ser Met Tyr Gln Lys Trp Tyr Phe Glu Val Thr Met Asp  
 660 665 670  
 His Ile Glu Gln Thr Thr His Met Met Pro His Leu Arg Ile Gly Trp  
 675 680 685  
 Ala Asn Thr Ser Gly Tyr Val Pro Tyr Pro Gly Gly Gly Lys Lys Trp  
 690 695 700  
 Gly Gly Asn Gly Val Gly Asp Asp Leu Tyr Ser Phe Gly Phe Asp Gly  
 705 710 715 720  
 Ala Phe Leu Trp Thr Gly Gly Arg Lys Thr Leu Val Val Asp Ala Leu  
 725 730 735  
 Pro Glu Glu Pro Phe Ile Arg Lys Gly Asp Val Ile Gly Val Ala Ile  
 740 745 750  
 Asp Leu Ser Val Pro Ile Ile Thr Phe Thr Phe Asn Gly Val Lys Val  
 755 760 765  
 Arg Gly Ser Phe Arg Asp Phe Asn Leu Asp Gly Met Phe Phe Pro Val  
 770 775 780  
 Met Ser Cys Ser Ser Lys Leu Ser Cys Arg Phe Leu Phe Gly Gly Asp  
 785 790 795 800  
 His Gly Arg Leu Lys Phe Ala Pro Pro Met Gly Phe Ser Ala Leu Val  
 805 810 815  
 Gln Cys Leu Met Pro Gln Gln Ile Leu Ser Leu Asp Pro Cys Phe Tyr  
 820 825 830  
 Phe Gly Asn Leu Ala Lys Asn Val Leu Ala Gly Pro Trp Leu Ile Glu  
 835 840 845  
 Asp Asp Thr Ala Phe Val Pro Lys Pro Val Asp Thr Thr Gly Val Thr  
 850 855 860  
 Leu Pro Ser Ser Val Asp Gln Ile Lys Glu Lys Leu Ala Glu Asn Ile  
 865 870 875 880

His Glu Met Trp Ala Leu Asn Lys Ile Glu Ala Gly Trp Ser Trp Gly  
 885 890 895  
 Glu His Arg Asp Asp Tyr His Arg Ile His Pro Cys Leu Thr His Phe  
 900 905 910  
 Glu Lys Leu Pro Ala Ala Glu Lys Arg Tyr Asp Asn Gln Leu Ala Val  
 915 920 925  
 Gln Thr Leu Lys Thr Ile Ile Ser Leu Gly Tyr Tyr Ile Thr Met Asp  
 930 935 940  
 Lys Pro Pro Ala Arg Ile Arg Pro Val Arg Leu Pro Asn Glu Ile Phe  
 945 950 955 960  
 Met Gln Gly Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser Ala Val  
 965 970 975  
 Thr Leu Thr Pro Lys Leu Glu Glu Leu Val Asp Gln Leu Ala Glu Asn  
 980 985 990  
 Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp Thr Tyr  
 995 1000 1005  
 Gly Leu Asn Glu Asp Ser Glu Asn His Arg Ser Pro His Leu Val  
 1010 1015 1020  
 Pro Tyr Ala Lys Val Asp Glu Ala Ile Lys Lys Ala Asn Arg Asp  
 1025 1030 1035  
 Thr Ala Ser Glu Thr Ser Ala Asn Ala Pro Gly Leu Arg Ile Cys  
 1040 1045 1050  
 Leu Gly Ser Ser Asp Gly Arg Arg Asn Gly Gly Thr Ser Gly Arg  
 1055 1060 1065  
 Gly Thr Thr Pro Gln Val Arg Arg Ile Pro Thr Tyr Arg Val Glu  
 1070 1075 1080  
 Arg Asn Tyr Ala Val Thr Ser Gly Lys Trp Tyr Phe Glu Phe Glu  
 1085 1090 1095  
 Val Leu Thr Ser Gly Pro Met Arg Val Gly Trp Ala Arg Ala Asp  
 1100 1105 1110  
 Cys Tyr Pro Gly Ala Met Leu Gly Ser Glu Asp Thr Ser Trp Ala  
 1115 1120 1125  
 Phe Asp Gly His Asn Val Thr Lys Met His Ala Gly Ser Ile Glu  
 1130 1135 1140  
 His Phe Gly Val Arg Tyr Glu Ala Gly Asp Val Ile Gly Cys Phe  
 1145 1150 1155  
 Ile Asp Val Lys Glu Gln Thr Ile Ser Phe Ser Leu Asn Gly Glu  
 1160 1165 1170  
 Leu Leu Met Asp Ala Leu Gly Gly Glu Thr Thr Phe Ala Asp Val  
 1175 1180 1185



Thr	Ala	Glu	Gly	Val	Gly	Phe	Val	Pro	Ala	Cys	Thr	Leu	Gly	Val
1190						1195					1200			
Gly	Gln	Lys	Ala	Arg	Leu	Ile	Tyr	Gly	Gln	Asp	Val	Asp	Ser	Leu
1205						1210					1215			
Lys	Phe	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	Phe
1220						1225					1230			
Cys	Val	Asn	Met	Arg	Arg	Pro	Val	Thr	His	Trp	Tyr	Thr	Lys	Asp
1235						1240					1245			
Gln	Pro	Ile	Phe	Glu	Asn	Thr	Glu	Glu	Met	Pro	Asp	Cys	Arg	Ile
1250						1255					1260			
Asp	Val	Thr	Arg	Ile	Pro	Gly	Gly	Ala	Asp	Thr	Pro	Pro	His	Leu
1265						1270					1275			
Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Lys	Ala	Asn	Trp
1280						1285					1290			
Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Thr	Cys	Met	Gly	Glu	Phe
1295						1300					1305			
Ile	Ser	Glu	Gln	Glu	Lys	Ala	Arg	Arg	Trp	Asp	Glu	Ile	Lys	Asn
1310						1315					1320			
Arg	Gln	Tyr	Arg	Leu	Met	Arg	Glu	Ala	Glu	Ile	Ala	Ala	Gln	Met
1325						1330					1335			
Gln	Val	Gln	Thr	Gln	Ala	Ala	His	Met	Asp	His	Met	Leu	Lys	Gly
1340						1345					1350			
Gly	Phe	Asn	Met	Asn	Asp	Ile	Lys	Gly	Leu	Thr	Arg	Asn	Phe	Asp
1355						1360					1365			
Glu	His	Ala	Asp	Ala	Glu	Ala	Asp	His	Met	Met	Arg	Gly	Pro	Asn
1370						1375					1380			
Arg	Pro	Pro	Arg	Lys	Gly	Ser	Leu	Thr	Arg	Asn	Ile	Thr	Phe	Glu
1385						1390					1395			
Thr	Asp	Met	Ser	Ala	Ala	Leu	Asp	Glu	Met	Gln	Arg	Ser	Thr	Ser
1400						1405					1410			
Val	Leu	Asp	Met	Asn	Gly	Leu	Gly	Glu	Glu	Met	Asp	Asp	Lys	Lys
1415						1420					1425			
Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys	Phe	Phe	Ser	Lys	Lys	Ser	Arg
1430						1435					1440			
Asp	Gln	Ser	Arg	Glu	Lys	Met	Gly	Ala	Arg	Thr	Leu	Asp	Thr	Ser
1445						1450					1455			
Leu	Glu	Arg	Arg	Asn	Thr	Val	Ala	His	Gly	Arg	Asn	Val	Val	Asn
1460						1465					1470			
Gln	Gln	Met	Thr	Thr	Arg	Ala	Pro	Thr	Leu	Arg	Leu	Asn	Asn	Ala
1475						1480					1485			

Glu	Ile	Pro	Pro	Ser	Pro	Val	Pro	Gln	Gly	Pro	Lys	Gln	Leu	Ser
	1490					1495					1500			
Gly	Ser	Asn	Leu	Gly	Gln	Gln	Pro	Val	Glu	Thr	Ser	Gly	Asp	Glu
	1505					1510					1515			
Met	Phe	Asp	Ala	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu	Tyr	Phe	Tyr
	1520					1525					1530			
Gly	Val	Arg	Ile	Phe	Pro	Gly	Gln	Asp	Pro	Thr	His	Val	Tyr	Val
	1535					1540					1545			
Gly	Trp	Val	Thr	Thr	Gln	Tyr	His	Leu	His	Ser	Arg	Glu	Phe	Asn
	1550					1555					1560			
Lys	Asn	Lys	Val	Arg	Arg	Gly	Ser	Val	Tyr	Ile	Glu	Asp	Asp	Tyr
	1565					1570					1575			
Glu	Met	Ala	Ile	Glu	Arg	Ile	Asp	Arg	Gln	Ser	Cys	Tyr	Val	Val
	1580					1585					1590			
Arg	Ala	Asp	Glu	Leu	Phe	Asn	Glu	Val	Thr	Gln	Asp	Ala	Ser	Gly
	1595					1600					1605			
Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Val	Gly	Cys	Phe	Val	Asp	Thr
	1610					1615					1620			
Ala	Thr	Gly	Ile	Ile	Arg	Phe	Thr	Cys	Glu	Gly	Lys	Asp	Thr	Ser
	1625					1630					1635			
His	Arg	Trp	Met	Met	Glu	Pro	Asp	Thr	Lys	Leu	Phe	Pro	Ala	Ile
	1640					1645					1650			
Phe	Val	Glu	Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile	Glu	Leu	Gly
	1655					1660					1665			
Arg	Thr	Pro	Thr	Thr	Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Pro	Thr
	1670					1675					1680			
Ser	Asp	Lys	His	Ile	Asn	Pro	Gln	Ser	Pro	Pro	Arg	Leu	Lys	Val
	1685					1690					1695			
Gln	Cys	Leu	Arg	Pro	His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Thr	Ala
	1700					1705					1710			
Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Asp	Val	Arg	Gly	Trp	Ser
	1715					1720					1725			
Met	Leu	Cys	Glu	Asp	Pro	Val	Ser	Met	Leu	Ala	Leu	His	Ile	Pro
	1730					1735					1740			
Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu	Leu	Ile	Glu	Met	Asp
	1745					1750					1755			
Lys	Leu	Leu	Ser	Phe	His	Ala	His	Ser	Leu	Thr	Leu	Tyr	Ala	Ala
	1760					1765					1770			
Leu	Cys	Tyr	Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Ala	Leu	Cys	Gln
	1775					1780					1785			

His Val	Asp Gln Lys Gln	Leu	Leu Tyr Ala Ile	Arg	Ser Glu Tyr
1790		1795		1800	
Met Ser	Gly Pro Leu Arg	Gln	Gly Phe Tyr Asp	Leu	Leu Ile Ala
1805		1810		1815	
Leu His	Leu Glu Ser His	Ala	Thr Thr Met Glu	Val	Cys Lys Asn
1820		1825		1830	
Glu Tyr	Ile Thr Pro Leu	Gly	Ala Glu Leu Lys	Glu	Leu Tyr Ser
1835		1840		1845	
Asp Glu	Glu Met Gln His	Ser	Leu Arg Ser Leu	Val	Thr Glu Ser
1850		1855		1860	
Val Arg	Pro Gln Leu Arg	Met	Thr Glu Ile Thr	Pro	Pro Val Ile
1865		1870		1875	
Ala Thr	Ser Ser Met Pro	Ser	Val Ser Ser Glu	Pro	Ile Pro Asp
1880		1885		1890	
Ile Asp	Gln Leu Tyr Ser	Pro	Lys Phe Pro Leu	Glu	Val Val Arg
1895		1900		1905	
Gln Phe	Val Met Glu Ala	Leu	Lys Asp Ala Val	Glu	Ile Asn Gln
1910		1915		1920	
Val His	Asn Arg Asp Pro	Ile	Gly Trp Thr Asn	Glu	Asn Leu Phe
1925		1930		1935	
Leu Pro	Leu Ile Lys Leu	Thr	Asp Arg Leu Leu	Leu	Val Gly Val
1940		1945		1950	
Leu Thr	Asp Glu Asp Val	Gln	Arg Leu Leu Val	Met	Ile Asp Pro
1955		1960		1965	
Glu Thr	Trp Asp Gln Ala	Phe	Glu Arg Glu Gly	Lys	Asp Glu His
1970		1975		1980	
Arg Lys	Gly Leu Leu Thr	Met	Lys Met Ala Glu	Gly	Ala Lys Leu
1985		1990		1995	
Gln Met	Cys Tyr Leu Leu	His	His Leu Tyr Asp	Thr	Gln Leu Arg
2000		2005		2010	
His Arg	Val Glu Ser Ile	Ile	Ala Phe Ser His	Asp	Phe Val Gly
2015		2020		2025	
Asp Leu	Gln Thr Asp Gln	Leu	Arg Arg Tyr Ile	Glu	Ile Lys Gln
2030		2035		2040	
Ser Asp	Leu Pro Ser Ala	Val	Ala Ala Lys Lys	Thr	Lys Glu Phe
2045		2050		2055	
Arg Cys	Pro Pro Arg Glu	Gln	Met Asn Gln Ile	Leu	Cys Phe Lys
2060		2065		2070	
Asn Leu	Glu Pro Asp Asp	Gln	Asp Asn Cys Thr	Cys	Gly Leu Glu
2075		2080		2085	

Leu	Arg	Gly	Arg	Leu	Gly	Asp	Phe	His	Asp	Ser	Leu	Met	Gln	Lys
2090						2095					2100			
Val	Ser	Leu	Asn	Ala	Leu	Gln	Glu	Pro	Asp	Gly	Val	Glu	Gly	Thr
2105						2110					2115			
Ala	Ile	Glu	Glu	Val	Lys	Thr	Gly	Pro	Ile	Thr	Lys	Ile	Tyr	Asn
2120						2125					2130			
Phe	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Gly	Pro	Lys	Glu	Val
2135						2140					2145			
Glu	Glu	Pro	Glu	Lys	Lys	Thr	Pro	Glu	Glu	Val	Phe	Arg	Lys	Val
2150						2155					2160			
Leu	Ile	Lys	Thr	Ile	Val	Ser	Trp	Ala	Glu	Glu	Ser	Gln	Ile	Glu
2165						2170					2175			
Asn	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Leu	Arg	Gln
2180						2185					2190			
Tyr	Asp	Thr	Val	Gly	Glu	Leu	Val	Arg	Ala	Leu	Glu	Lys	Thr	Tyr
2195						2200					2205			
Val	Ile	Asn	Thr	Arg	Ala	Arg	Asp	Asp	Val	Ala	Glu	Met	Trp	Val
2210						2215					2220			
Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser	Gln
2225						2230					2235			
Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val	Asn
2240						2245					2250			
Asn	Ala	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Ile	Leu	Arg
2255						2260					2265			
Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Ile	Gly	Arg
2270						2275					2280			
Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Thr	Gln	Ser	Glu	Val	Ala
2285						2290					2295			
Glu	Gly	Ala	Pro	Ser	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu	Met	Val
2300						2305					2310			
Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Gly	Arg
2315						2320					2325			
Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu	Leu	Asp
2330						2335					2340			
Asn	Ala	Asn	Ile	Leu	Leu	Ala	Arg	Pro	Ser	Leu	Arg	Gly	Ser	Thr
2345						2350					2355			
Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr	Glu	Leu
2360						2365					2370			
Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala	Val	Tyr
2375						2380					2385			

Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Val	Glu	Lys
2390						2395					2400			
Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu	Arg	Tyr
2405						2410					2415			
Leu	Asp	Phe	Leu	Arg	Tyr	Cys	Val	Trp	Val	Asn	Gly	Glu	Ser	Val
2420						2425					2430			
Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg	Arg	Pro
2435						2440					2445			
Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly	Leu	Phe
2450						2455					2460			
Arg	Ala	Ile	Val	Glu	Ala	Asn	Arg	Met	Ser	Glu	Arg	Ile	Ser	Asp
2465						2470					2475			
Arg	Cys	Lys	Met	Gln	Asp	Glu	Ala	Glu	Gly	Thr	Ile	Ala	Gly	Leu
2480						2485					2490			
Asn	Phe	Thr	His	Pro	Leu	Pro	Glu	Gly	Glu	Glu	Asp	Glu	Asp	Tyr
2495						2500					2505			
Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu	Val
2510						2515					2520			
Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Ser	Val	Ile	Glu	Gln
2525						2530					2535			
Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ser	Leu	Arg	Ser	Leu
2540						2545					2550			
Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Lys	Phe	Thr
2555						2560					2565			
Leu	Ser	Gln	Thr	Ala	Pro	Gly	Glu	Glu	Lys	Pro	Lys	Ser	Asp	Met
2570						2575					2580			
Pro	Ser	Gly	Leu	Leu	Pro	Asn	Asn	Lys	Gln	Ser	Ile	Val	Leu	Phe
2585						2590					2595			
Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Ala	Gln	Asp	Leu	Phe	Tyr	Arg
2600						2605					2610			
Leu	Leu	Glu	Asp	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Thr	Ala	Thr	Ile
2615						2620					2625			
Leu	Asp	Lys	Ser	Asp	Gly	Ser	Glu	Ser	Asp	Met	Ala	Leu	Ala	Met
2630						2635					2640			
Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys	His
2645						2650					2655			
Ser	Lys	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu	Leu	Asp
2660						2665					2670			
Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met	Leu
2675						2680					2685			

Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val	Ala	Leu
	2690					2695					2700			
Thr	Ser	Gln	Met	Gln	Pro	Ala	Met	Leu	Leu	Lys	Leu	Leu	Arg	Lys
	2705					2710					2715			
Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val	Ala
	2720					2725					2730			
Leu	Arg	Leu	Leu	Thr	Leu	His	Phe	Asp	Arg	Cys	Ala	Lys	Tyr	Tyr
	2735					2740					2745			
Gly	Ser	Thr	Gln	Gly	Gln	Gly	Ser	Tyr	Gly	Ala	Ser	Ser	Asp	Glu
	2750					2755					2760			
Glu	Lys	Arg	Leu	Thr	Met	Leu	Leu	Phe	Ser	Asn	Ile	Phe	Asp	Ser
	2765					2770					2775			
Leu	Ser	Asn	Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	Lys	Ala	Leu
	2780					2785					2790			
Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr	Ser
	2795					2800					2805			
Leu	Ser	Lys	Asn	Thr	Asp	Glu	Asp	Tyr	Tyr	Gly	Arg	Gln	Met	Gly
	2810					2815					2820			
Ala	Pro	Asp	Gln	Pro	Gln	Tyr	Met	Pro	Asn	Pro	Ile	Asp	Thr	Asn
	2825					2830					2835			
Asn	Val	His	Leu	Asp	Asn	Asp	Leu	Asn	Ser	Leu	Val	Gln	Lys	Phe
	2840					2845					2850			
Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Arg	Leu	Glu	Gly
	2855					2860					2865			
Gly	Trp	Thr	Tyr	Gly	Asp	Ile	Arg	Ser	Asp	Asn	Asp	Arg	Lys	His
	2870					2875					2880			
Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Ser	Glu	Tyr	Glu	Arg	Glu
	2885					2890					2895			
Arg	Tyr	Arg	Asp	Pro	Val	Arg	Glu	Cys	Leu	Lys	Gly	Leu	Leu	Ala
	2900					2905					2910			
Ile	Gly	Trp	Thr	Val	Glu	His	Ser	Glu	Val	Glu	Val	Pro	Leu	Asn
	2915					2920					2925			
His	Arg	Gly	Ser	Thr	Arg	Arg	Gln	Ser	Lys	Pro	Gln	Ile	Asn	Glu
	2930					2935					2940			
Phe	Gln	Asn	Glu	Gly	Ser	Pro	Phe	Asn	Tyr	Asn	Pro	His	Pro	Val
	2945					2950					2955			
Asp	Met	Ser	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn	Met	Ala
	2960					2965					2970			
Glu	Arg	Leu	Ala	Glu	Asn	Ser	His	Asp	Ile	Trp	Ala	Lys	Lys	Lys
	2975					2980					2985			

Asn	Glu	Glu	Leu	Asn	Gly	Cys	Gly	Gly	Val	Ile	His	Pro	Gln	Leu
2990						2995					3000			
Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Lys	Lys	Asp	Arg
3005						3010					3015			
Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Met	Gln	Tyr	Gln	Gly	Tyr
3020						3025					3030			
Lys	Leu	His	Lys	Pro	Ser	Lys	Gly	Gly	Ala	Val	Glu	Glu	Gly	Gly
3035						3040					3045			
Ala	Thr	Gln	Ala	Ala	Val	Glu	Leu	Arg	Phe	Ser	Tyr	Ser	Leu	Leu
3050						3055					3060			
Glu	Lys	Leu	Ile	Gln	Tyr	Leu	Asp	Arg	Ala	Thr	Ile	Asn	Met	Lys
3065						3070					3075			
Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe	Lys
3080						3085					3090			
Thr	Ala	Thr	Arg	Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu	Pro
3095						3100					3105			
Leu	Met	Glu	Lys	Tyr	Phe	Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile	Ala
3110						3115					3120			
Ile	Ala	Thr	Ala	Thr	Asn	Asn	Ile	Gly	Ala	Ala	Ser	Leu	Lys	Glu
3125						3130					3135			
Lys	Glu	Met	Val	Ala	Ser	Ile	Phe	Cys	Lys	Leu	Ala	Ala	Leu	Leu
3140						3145					3150			
Arg	Asn	Arg	Leu	Ser	Ala	Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr	Val
3155						3160					3165			
Arg	Cys	Leu	Gln	Val	Leu	Val	Lys	Gly	Ile	Asp	Ala	Arg	Thr	Leu
3170						3175					3180			
Thr	Lys	Asn	Cys	Pro	Glu	Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr	Phe
3185						3190					3195			
Phe	Asn	Gln	Thr	Ser	Asp	Asp	Leu	Gly	Asn	Thr	Ile	Leu	Asn	Gln
3200						3205					3210			
Gln	Asp	Gly	Lys	Tyr	Ser	His	Leu	Arg	Gly	Thr	His	Leu	Lys	Thr
3215						3220					3225			
Ser	Thr	Ser	Leu	Gly	Tyr	Val	Asn	Gln	Val	Val	Leu	Pro	Val	Leu
3230						3235					3240			
Thr	Ala	Met	Phe	Asp	His	Leu	Ala	Ala	Cys	Asp	Tyr	Gly	Ser	Asp
3245						3250					3255			
Leu	Leu	Leu	Asp	Glu	Ile	Gln	Val	Ala	Ser	Tyr	Lys	Ile	Leu	Ala
3260						3265					3270			
Ala	Leu	Tyr	His	Leu	Gly	Thr	Asp	Gly	Thr	Leu	Thr	His	Asp	Arg
3275						3280					3285			

Lys Tyr	Leu Lys Thr	Glu Ile	Glu Arg His Arg	Pro	Ala Leu Gly
3290		3295		3300	
Ser Cys	Leu Gly Ala Tyr	Ser	Ser Cys Phe Pro	Val	Ala Phe Leu
3305		3310		3315	
Glu Pro	His Leu Asn Lys	His	Asn Gln Tyr Ser	Leu	Leu Asn Arg
3320		3325		3330	
Ile Ala	Asp His Ser Leu	Glu	Ala Gln Asp Ile	Met	Val Lys Met
3335		3340		3345	
Glu Ser	Cys Met Pro Asn	Leu	Glu Thr Ile Leu	Gly	Glu Val Asp
3350		3355		3360	
Gln Phe	Val Glu Ser Asp	Lys	Thr Tyr Asn Asp	Ala	Pro His Ile
3365		3370		3375	
Ile Asp	Val Ile Leu Pro	Leu	Leu Cys Ala Tyr	Leu	Pro Phe Trp
3380		3385		3390	
Trp Ser	Gln Gly Pro Asp	Asn	Val Ser Pro Thr	Ser	Gly Asn His
3395		3400		3405	
Val Thr	Met Val Thr Ala	Asp	His Met Asn Pro	Leu	Leu Arg Asn
3410		3415		3420	
Val Leu	Lys Met Ile Lys	Lys	Asn Ile Gly Asn	Asp	Asn Ala Pro
3425		3430		3435	
Trp Met	Thr Arg Ile Ala	Ala	Tyr Thr Gln Gln	Ile	Ile Ile Asn
3440		3445		3450	
Thr Ser	Glu Glu Leu Leu	Lys	Asp Pro Phe Leu	Pro	Leu Ala Glu
3455		3460		3465	
Arg Val	Lys Lys Arg Thr	Glu	Asn Met Leu His	Lys	Glu Asp Ser
3470		3475		3480	
Met Arg	Gly Phe Ile Lys	Ser	Ala Thr Asp Asp	Thr	Ser Gln Val
3485		3490		3495	
Glu Thr	Gln Leu Gln Glu	Asp	Trp Asn Leu Leu	Val	Arg Asp Ile
3500		3505		3510	
Tyr Ser	Phe Tyr Pro Leu	Leu	Ile Lys Tyr Val	Asp	Leu Gln Arg
3515		3520		3525	
Asn His	Trp Leu Lys Asp	Asn	Ile Pro Glu Ala	Glu	Glu Leu Tyr
3530		3535		3540	
Asn His	Val Ala Glu Ile	Phe	Asn Ile Trp Ser	Lys	Ser Gln Tyr
3545		3550		3555	
Phe Leu	Lys Glu Glu Gln	Asn	Phe Ile Ser Ala	Asn	Glu Ile Asp
3560		3565		3570	
Asn Met	Ala Leu Ile Met	Pro	Thr Ala Thr Arg	Arg	Ser Ala Ile
3575		3580		3585	



Ser	Glu	Gly	Ala	Pro	Ala	Val	Gly	Gly	Lys	Val	Lys	Lys	Lys	Lys
3590						3595					3600			
Lys	Asn	Arg	Asp	Lys	Lys	Arg	Asp	Lys	Asp	Lys	Glu	Val	Gln	Ala
3605						3610					3615			
Ser	Leu	Met	Val	Ala	Cys	Leu	Lys	Arg	Leu	Leu	Pro	Val	Gly	Leu
3620						3625					3630			
Asn	Leu	Phe	Ala	Gly	Arg	Glu	Gln	Glu	Leu	Val	Gln	His	Cys	Lys
3635						3640					3645			
Asp	Arg	Tyr	Leu	Lys	Lys	Met	Pro	Glu	Tyr	Asp	Val	Ile	Glu	Phe
3650						3655					3660			
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3665						3670					3675			
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Glu	Glu	Pro	Val	Asp	Glu	Gln	Ala	Leu	Glu	Lys	Ala	Asn	Val	Asn
3695						3700					3705			
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3740						3745					3750			
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3755						3760					3765			
Leu	His	Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe	Ala	Arg
3770						3775					3780			
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3860						3865					3870			
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3875						3880					3885			

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Arg 3905	Leu	Ser	Asn	Arg	Gly	Val 3910	Ala	Glu	Met	Val	Leu 3915	Leu	His	Ile
Ser 3920	Ala	Ser	Lys	Gly	Ile	Pro 3925	Ser	Glu	Met	Val	Met 3930	Thr	Thr	Leu
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His 4025	Asn	Leu	Glu	Trp	Gln	Asn 4030	Tyr	Leu	Arg	Thr	Gln 4035	Ala	Gly	Asn
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Arg 4055	Leu	Gln	Glu	Ser	Ile	Met 4060	Asp	Phe	Tyr	Trp	His 4065	Tyr	Ser	Ser
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Ile 4085	Glu	Val	Ala	Ser	Gln	Val 4090	Phe	Asn	Thr	Leu	Ile 4095	Glu	Val	Ile
Gln 4100	Gly	Pro	Cys	Thr	Leu	Asn 4105	Gln	Gln	Ala	Leu	Ala 4110	His	Ser	Arg
Leu 4115	Trp	Asp	Ala	Val	Gly	Gly 4120	Phe	Leu	Phe	Leu	Phe 4125	Ser	His	Met
Gln 4130	Asp	Lys	Leu	Ser	Lys	His 4135	Ser	Ser	Gln	Val	Asp 4140	Leu	Leu	Lys
Glu 4145	Leu	Leu	Asn	Leu	Gln	Lys 4150	Asp	Met	Ile	Thr	Met 4155	Met	Leu	Ser
Met 4160	Leu	Glu	Gly	Asn	Val	Val 4165	Asn	Gly	Thr	Ile	Gly 4170	Lys	Gln	Met
Val 4175	Asp	Thr	Leu	Val	Glu	Ser 4180	Ala	Ser	Asn	Val	Glu 4185	Leu	Ile	Leu

Lys Tyr	Phe Asp Met Phe	Leu	Lys Leu Ala Asp	Leu	Ile Glu Ser
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Pro Ser	Phe His Glu Val	Asp	Met Lys Asn Glu	Gly	Trp Val Thr
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Pro Lys	Asp Phe Arg Glu	Lys	Met Glu Gln Ser	Lys	Asn Tyr Thr
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Pro Glu	Glu Met Asp Phe	Leu	Leu Ala Cys Cys	Glu	Arg Asn His
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Glu Gly	Lys Ile Asp Tyr	Arg	Ala Phe Val Glu	His	Phe His Glu
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Pro Ser	Lys Glu Ile Gly	Phe	Asn Leu Ala Val	Leu	Leu Thr Asn
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Leu Ser	Glu His Met Pro	Asn	Glu Pro Arg Leu	Ala	Arg Phe Leu
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Glu Thr	Ala Gly Ser Val	Leu	Asn Tyr Phe Glu	Pro	Phe Leu Gly
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Arg Ile	Glu Ile Leu Gly	Ser	Ser Lys Arg Ile	Glu	Arg Val Tyr
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Phe Glu	Ile Lys Asp Ser	Asn	Ile Glu Gln Trp	Glu	Lys Pro Gln
4325		4330		4335	
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Gly Gly	Asp Lys Glu Lys	Leu	Glu Ala Phe Val	Asn	Phe Cys Glu
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Asp Asp	Gly Gly Gly Asn	Val	Lys Arg Asp Thr	Ala	Tyr Ser Ser
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Tyr Met	Ser Glu Glu Glu	Glu	Glu Arg Ala Ala	Arg	Asp Pro Ile
4400		4405		4410	
Arg Arg	Thr Ile Thr Ala	Val	Lys Glu Gly Leu	Lys	Phe Gly Val
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His Met	Leu Ser Pro Ala	Asn	Ile Lys His Gln	Ile	Gly Val Met
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Gln Thr	Lys Ser Ile Pro	Glu	Leu Ile Val Gly	Phe	Phe Lys Ile
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Ile Phe	Tyr Ile Phe Tyr	Tyr	Thr Gly Tyr Ala	His	Phe Cys Val
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Val Arg	Tyr Ile Phe Gly	Ile	Leu Leu Asn Leu	Met	Arg Gly Pro
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Tyr	Lys	Val	Val	Val	His	Glu	Ser	Pro	Ala	Asn	Ser	Ser	Met	Glu
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4685						4690					4695			
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4910						4915					4920			
Thr	Val	Met	Leu	Leu	Thr	Ile	Ile	Val	Tyr	Ile	Tyr	Thr	Val	Ile
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Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe	Tyr	Ile	Gln	Glu	Glu	Asp	Glu
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4955						4960					4965			
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Cys	Gly	Met	Gly	Lys	Asp	Phe	Phe	Asp	Ile	Val	Pro	His	Gly	Phe
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Phe	Leu	Met	His	Leu	Ile	Asn	Lys	Pro	Asp	Thr	Glu	Tyr	Thr	Gly
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<213> *Drosophila melanogaster*

<220>

<223> gi 2160476

<400> 124

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Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu  
 35 40 45

Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe  
 50 55 60

Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65 70 75 80

Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
 85 90 95

Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met  
 100 105 110

Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
 115 120 125

Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
 130 135 140

Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
 145 150 155 160

Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His  
 165 170 175

Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val  
 180 185 190

Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys  
 195 200 205

Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly  
 210 215 220

Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Gly Arg Glu Ala Gly  
 225 230 235 240  
 Gln Asn Ile Val Ile Tyr Glu Gly Gly Val Val Met Ala Gln Ala Arg  
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 Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Thr Gly Gly Phe  
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 Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Ile Thr Thr Gly Arg  
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 Tyr Leu Gly Val Asn Asp Ser Asn Glu Leu Ile Leu Val Lys Lys Glu  
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 Lys Val Asn Leu Asn Glu Met Val Met Cys Leu Glu Asp Leu Ile Asn  
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 Val Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Ile Asn Ile Ile Thr  
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 Ser Gln Gly Phe Leu Ala Ser Phe Leu Ala Gly Asp Glu Thr Gly Gln  
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Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Ser Glu Gly  
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 Ser Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro Glu  
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 Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Leu Leu  
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 Asp Gly Ser Ser Met Tyr Gln Lys Trp Tyr Phe Glu Val Thr Met Asp  
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 His Ile Glu Gln Thr Thr His Met Met Pro His Leu Arg Ile Gly Trp  
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 Asp Asp Thr Ala Phe Val Pro Lys Pro Val Asp Thr Thr Gly Val Thr  
 850 855 860



Leu Pro Ser Ser Val Asp Gln Ile Lys Glu Lys Leu Ala Glu Asn Ile  
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 Glu His Arg Asp Asp Tyr His Arg Ile His Pro Cys Leu Thr His Phe  
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 Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp Thr Tyr  
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Cys	Val	Asn	Met	Arg	Arg	Pro	Val	Thr	His	Trp	Tyr	Thr	Lys	Asp
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1505						1510					1515			
Met	Phe	Asp	Ala	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu	Tyr	Phe	Tyr
1520						1525					1530			
Gly	Val	Arg	Ile	Phe	Pro	Gly	Gln	Asp	Pro	Thr	His	Val	Tyr	Val
1535						1540					1545			
Gly	Trp	Val	Thr	Thr	Gln	Tyr	His	Leu	His	Ser	Arg	Glu	Phe	Asn
1550						1555					1560			
Lys	Asn	Lys	Val	Arg	Arg	Gly	Ser	Val	Tyr	Ile	Glu	Asp	Asp	Tyr
1565						1570					1575			
Glu	Met	Ala	Ile	Glu	Arg	Ile	Asp	Arg	Gln	Ser	Cys	Tyr	Val	Val
1580						1585					1590			
Arg	Ala	Asp	Glu	Leu	Phe	Asn	Glu	Val	Thr	Gln	Asp	Ala	Ser	Gly
1595						1600					1605			
Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Val	Gly	Cys	Phe	Val	Asp	Thr
1610						1615					1620			
Ala	Thr	Gly	Ile	Ile	Arg	Phe	Thr	Cys	Glu	Gly	Lys	Asp	Thr	Ser
1625						1630					1635			
His	Arg	Trp	Met	Met	Glu	Pro	Asp	Thr	Lys	Leu	Phe	Pro	Ala	Ile
1640						1645					1650			
Phe	Val	Glu	Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile	Glu	Leu	Gly
1655						1660					1665			
Arg	Thr	Pro	Thr	Thr	Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Pro	Thr
1670						1675					1680			
Ser	Asp	Lys	His	Ile	Asn	Pro	Gln	Ser	Pro	Pro	Arg	Leu	Lys	Val
1685						1690					1695			
Gln	Cys	Leu	Arg	Pro	His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Thr	Ala
1700						1705					1710			
Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Asp	Val	Arg	Gly	Trp	Ser
1715						1720					1725			
Met	Leu	Cys	Glu	Asp	Pro	Val	Ser	Met	Leu	Ala	Leu	His	Ile	Pro
1730						1735					1740			
Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu	Leu	Ile	Glu	Met	Asp
1745						1750					1755			
Lys	Leu	Leu	Ser	Phe	His	Ala	His	Ser	Leu	Thr	Leu	Tyr	Ala	Ala
1760						1765					1770			

Leu	Cys	Tyr	Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Ala	Leu	Cys	Gln
1775						1780					1785			
His	Val	Asp	Gln	Lys	Gln	Leu	Leu	Tyr	Ala	Ile	Arg	Ser	Glu	Tyr
1790						1795					1800			
Met	Ser	Gly	Pro	Leu	Arg	Gln	Gly	Phe	Tyr	Asp	Leu	Leu	Ile	Ala
1805						1810					1815			
Leu	His	Leu	Glu	Ser	His	Ala	Thr	Thr	Met	Glu	Val	Cys	Lys	Asn
1820						1825					1830			
Glu	Tyr	Ile	Thr	Pro	Leu	Gly	Ala	Glu	Leu	Lys	Glu	Leu	Tyr	Ser
1835						1840					1845			
Asp	Glu	Glu	Met	Gln	His	Ser	Leu	Arg	Ser	Leu	Val	Thr	Glu	Ser
1850						1855					1860			
Val	Arg	Pro	Gln	Leu	Arg	Met	Thr	Glu	Ile	Thr	Pro	Pro	Val	Ile
1865						1870					1875			
Ala	Thr	Ser	Ser	Met	Pro	Ser	Val	Ser	Ser	Glu	Pro	Ile	Pro	Asp
1880						1885					1890			
Ile	Asp	Gln	Leu	Tyr	Ser	Pro	Lys	Phe	Pro	Leu	Glu	Val	Val	Arg
1895						1900					1905			
Gln	Phe	Val	Met	Glu	Ala	Leu	Lys	Asp	Ala	Val	Glu	Ile	Asn	Gln
1910						1915					1920			
Val	His	Asn	Arg	Asp	Pro	Ile	Gly	Trp	Thr	Asn	Glu	Asn	Leu	Phe
1925						1930					1935			
Leu	Pro	Leu	Ile	Lys	Leu	Thr	Asp	Arg	Leu	Leu	Leu	Val	Gly	Val
1940						1945					1950			
Leu	Thr	Asp	Glu	Asp	Val	Gln	Arg	Leu	Leu	Val	Met	Ile	Asp	Pro
1955						1960					1965			
Glu	Thr	Trp	Asp	Gln	Ala	Phe	Glu	Arg	Glu	Gly	Lys	Asp	Glu	His
1970						1975					1980			
Arg	Lys	Gly	Leu	Leu	Thr	Met	Lys	Met	Ala	Glu	Gly	Ala	Lys	Leu
1985						1990					1995			
Gln	Met	Cys	Tyr	Leu	Leu	His	His	Leu	Tyr	Asp	Thr	Gln	Leu	Arg
2000						2005					2010			
His	Arg	Val	Glu	Ser	Ile	Ile	Ala	Phe	Ser	His	Asp	Phe	Val	Gly
2015						2020					2025			
Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Ile	Glu	Ile	Lys	Gln
2030						2035					2040			
Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys	Thr	Lys	Glu	Phe
2045						2050					2055			
Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Gln	Ile	Leu	Cys	Phe	Lys
2060						2065					2070			

Asn	Leu	Glu	Pro	Asp	Asp	Gln	Asp	Asn	Cys	Thr	Cys	Gly	Leu	Glu
2075						2080					2085			
Leu	Arg	Gly	Arg	Leu	Gly	Asp	Phe	His	Asp	Ser	Leu	Met	Gln	Lys
2090						2095					2100			
Val	Ser	Leu	Asn	Ala	Leu	Gln	Glu	Pro	Asp	Gly	Val	Glu	Gly	Thr
2105						2110					2115			
Ala	Ile	Glu	Glu	Val	Lys	Thr	Gly	Pro	Ile	Thr	Lys	Ile	Tyr	Asn
2120						2125					2130			
Phe	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Gly	Pro	Lys	Glu	Val
2135						2140					2145			
Glu	Glu	Pro	Glu	Lys	Lys	Thr	Pro	Glu	Glu	Val	Phe	Arg	Lys	Val
2150						2155					2160			
Leu	Ile	Lys	Thr	Ile	Val	Ser	Trp	Ala	Glu	Glu	Ser	Gln	Ile	Glu
2165						2170					2175			
Asn	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Leu	Arg	Gln
2180						2185					2190			
Tyr	Asp	Thr	Val	Gly	Glu	Leu	Val	Arg	Ala	Leu	Glu	Lys	Thr	Tyr
2195						2200					2205			
Val	Ile	Asn	Thr	Arg	Ala	Arg	Asp	Asp	Val	Ala	Glu	Met	Trp	Val
2210						2215					2220			
Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser	Gln
2225						2230					2235			
Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val	Asn
2240						2245					2250			
Asn	Ala	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Ile	Leu	Arg
2255						2260					2265			
Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Ile	Gly	Arg
2270						2275					2280			
Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Thr	Gln	Ser	Glu	Val	Ala
2285						2290					2295			
Glu	Gly	Ala	Pro	Ser	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu	Met	Val
2300						2305					2310			
Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Gly	Arg
2315						2320					2325			
Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu	Leu	Asp
2330						2335					2340			
Asn	Ala	Asn	Ile	Leu	Leu	Ala	Arg	Pro	Ser	Leu	Arg	Gly	Ser	Thr
2345						2350					2355			
Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr	Glu	Leu
2360						2365					2370			

Ala Leu	Ala Leu Arg Glu His	Tyr Leu Glu Lys Ile	Ala Val Tyr
2375	2380	2385	
Leu Ser	Arg Cys Gly Leu Gln	Ser Asn Ser Glu Leu	Val Glu Lys
2390	2395	2400	
Gly Tyr	Pro Asp Leu Gly Trp	Asp Pro Val Glu Gly	Glu Arg Tyr
2405	2410	2415	
Leu Asp	Phe Leu Arg Tyr Cys	Val Trp Val Asn Gly	Glu Ser Val
2420	2425	2430	
Glu Glu	Asn Ala Asn Leu Val	Ile Arg Leu Leu Ile	Arg Arg Pro
2435	2440	2445	
Glu Cys	Leu Gly Pro Ala Leu	Arg Gly Glu Gly Glu	Gly Leu Phe
2450	2455	2460	
Arg Ala	Ile Val Glu Ala Asn	Arg Met Ser Glu Arg	Ile Ser Asp
2465	2470	2475	
Arg Cys	Lys Met Gln Asp Glu	Ala Glu Gly Thr Ile	Ala Gly Leu
2480	2485	2490	
Asn Phe	Thr His Pro Leu Pro	Glu Gly Glu Glu Asp	Glu Asp Tyr
2495	2500	2505	
Ile Asp	Thr Gly Ala Ala Ile	Leu Asn Phe Tyr Cys	Thr Leu Val
2510	2515	2520	
Asp Leu	Leu Gly Arg Cys Ala	Pro Asp Ala Ser Val	Ile Glu Gln
2525	2530	2535	
Gly Lys	Asn Glu Ser Leu Arg	Ala Arg Ala Ser Leu	Arg Ser Leu
2540	2545	2550	
Val Pro	Leu Glu Asp Leu Gln	Gly Val Leu Ser Leu	Lys Phe Thr
2555	2560	2565	
Leu Ser	Gln Thr Ala Pro Gly	Glu Glu Lys Pro Lys	Ser Asp Met
2570	2575	2580	
Pro Ser	Gly Leu Leu Pro Asn	Asn Lys Gln Ser Ile	Val Leu Phe
2585	2590	2595	
Leu Glu	Arg Val Tyr Gly Ile	Glu Ala Gln Asp Leu	Phe Tyr Arg
2600	2605	2610	
Leu Leu	Glu Asp Ala Phe Leu	Pro Asp Leu Arg Thr	Ala Thr Ile
2615	2620	2625	
Leu Asp	Lys Ser Asp Gly Ser	Glu Ser Asp Met Ala	Leu Ala Met
2630	2635	2640	
Asn Arg	Tyr Ile Gly Asn Ser	Ile Leu Pro Leu Leu	Ile Lys His
2645	2650	2655	
Ser Lys	Phe Tyr Asn Glu Ala	Glu Asn Tyr Ala Ser	Leu Leu Asp
2660	2665	2670	

Ala Thr	Leu His Thr Val Tyr	Arg Leu Ser Lys Asn	Arg Met Leu
2675	2680	2685	
Thr Lys	Gly Gln Arg Glu Ala	Val Ser Asp Phe	Leu Val Ala Leu
2690	2695	2700	
Thr Ser	Gln Met Gln Pro Ala	Met Leu Leu Lys	Leu Leu Arg Lys
2705	2710	2715	
Leu Thr	Val Asp Val Ser Lys	Leu Ser Glu Tyr Thr	Thr Val Ala
2720	2725	2730	
Leu Arg	Leu Leu Thr Leu His	Phe Asp Arg Cys Ala	Lys Tyr Tyr
2735	2740	2745	
Gly Ser	Thr Gln Gly Gln Gly	Ser Tyr Gly Ala Ser	Ser Asp Glu
2750	2755	2760	
Glu Lys	Arg Leu Thr Met Leu	Leu Phe Ser Asn Ile	Phe Asp Ser
2765	2770	2775	
Leu Ser	Asn Met Asp Tyr Asp	Pro Glu Leu Phe Gly	Lys Ala Leu
2780	2785	2790	
Pro Cys	Leu Ile Ala Ile Gly	Cys Ala Leu Pro Pro	Asp Tyr Ser
2795	2800	2805	
Leu Ser	Lys Asn Thr Asp Glu	Asp Tyr Tyr Gly Arg	Gln Met Gly
2810	2815	2820	
Ala Pro	Asp Gln Pro Gln Tyr	Met Pro Asn Pro Ile	Asp Thr Asn
2825	2830	2835	
Asn Val	His Leu Asp Asn Asp	Leu Asn Ser Leu Val	Gln Lys Phe
2840	2845	2850	
Ser Glu	His Tyr His Asp Ala	Trp Ala Ser Arg Arg	Leu Glu Gly
2855	2860	2865	
Gly Trp	Thr Tyr Gly Asp Ile	Arg Ser Asp Asn Asp	Arg Lys His
2870	2875	2880	
Pro Arg	Leu Lys Pro Tyr Asn	Met Leu Ser Glu Tyr	Glu Arg Glu
2885	2890	2895	
Arg Tyr	Arg Asp Pro Val Arg	Glu Cys Leu Lys Gly	Leu Leu Ala
2900	2905	2910	
Ile Gly	Trp Thr Val Glu His	Ser Glu Val Glu Val	Pro Leu Asn
2915	2920	2925	
His Arg	Gly Ser Thr Arg Arg	Gln Ser Lys Pro Gln	Ile Asn Glu
2930	2935	2940	
Phe Gln	Asn Glu Gly Ser Pro	Phe Asn Tyr Asn Pro	His Pro Val
2945	2950	2955	
Asp Met	Ser Asn Leu Thr Leu	Ser Arg Glu Met Gln	Asn Met Ala
2960	2965	2970	

Glu Arg	Leu Ala	Glu Asn	Ser	His Asp	Ile Trp	Ala	Lys Lys Lys
2975			2980			2985	
Asn Glu	Glu Leu	Asn Gly	Cys	Gly Gly	Val Ile	His	Pro Gln Leu
2990			2995			3000	
Val Pro	Tyr Asp	Leu Leu	Thr	Asp Lys	Glu Lys	Lys	Lys Asp Arg
3005			3010			3015	
Glu Arg	Ser Gln	Glu Phe	Leu	Lys Tyr	Met Gln	Tyr	Gln Gly Tyr
3020			3025			3030	
Lys Leu	His Lys	Pro Ser	Lys	Gly Gly	Ala Val	Glu	Glu Gly Gly
3035			3040			3045	
Ala Thr	Gln Ala	Ala Val	Glu	Leu Arg	Phe Ser	Tyr	Ser Leu Leu
3050			3055			3060	
Glu Lys	Leu Ile	Gln Tyr	Leu	Asp Arg	Ala Thr	Ile	Asn Met Lys
3065			3070			3075	
Leu Leu	Lys Pro	Ser Thr	Thr	Phe Ser	Arg Arg	Ser	Ser Phe Lys
3080			3085			3090	
Thr Ala	Thr Arg	Asp Ile	Lys	Phe Phe	Ser Lys	Val	Val Leu Pro
3095			3100			3105	
Leu Met	Glu Lys	Tyr Phe	Ser	Thr His	Arg Asn	Tyr	Phe Ile Ala
3110			3115			3120	
Ile Ala	Thr Ala	Thr Asn	Asn	Ile Gly	Ala Ala	Ser	Leu Lys Glu
3125			3130			3135	
Lys Glu	Met Val	Ala Ser	Ile	Phe Cys	Lys Leu	Ala	Ala Leu Leu
3140			3145			3150	
Arg Asn	Arg Leu	Ser Ala	Phe	Gly Pro	Asp Val	Arg	Ile Thr Val
3155			3160			3165	
Arg Cys	Leu Gln	Val Leu	Val	Lys Gly	Ile Asp	Ala	Arg Thr Leu
3170			3175			3180	
Thr Lys	Asn Cys	Pro Glu	Phe	Ile Arg	Thr Ser	Met	Leu Thr Phe
3185			3190			3195	
Phe Asn	Gln Thr	Ser Asp	Asp	Leu Gly	Asn Thr	Ile	Leu Asn Gln
3200			3205			3210	
Gln Asp	Gly Lys	Tyr Ser	His	Leu Arg	Gly Thr	His	Leu Lys Thr
3215			3220			3225	
Ser Thr	Ser Leu	Gly Tyr	Val	Asn Gln	Val Val	Leu	Pro Val Leu
3230			3235			3240	
Thr Ala	Met Phe	Asp His	Leu	Ala Ala	Cys Asp	Tyr	Gly Ser Asp
3245			3250			3255	
Leu Leu	Leu Asp	Glu Ile	Gln	Val Ala	Ser Tyr	Lys	Ile Leu Ala
3260			3265			3270	



Ala	Leu	Tyr	His	Leu	Gly	Thr	Asp	Gly	Thr	Leu	Thr	His	Asp	Arg
3275						3280					3285			
Lys	Tyr	Leu	Lys	Thr	Glu	Ile	Glu	Arg	His	Arg	Pro	Ala	Leu	Gly
3290						3295					3300			
Ser	Cys	Leu	Gly	Ala	Tyr	Ser	Ser	Cys	Phe	Pro	Val	Ala	Phe	Leu
3305						3310					3315			
Glu	Pro	His	Leu	Asn	Lys	His	Asn	Gln	Tyr	Ser	Leu	Leu	Asn	Arg
3320						3325					3330			
Ile	Ala	Asp	His	Ser	Leu	Glu	Ala	Gln	Asp	Ile	Met	Val	Lys	Met
3335						3340					3345			
Glu	Ser	Cys	Met	Pro	Asn	Leu	Glu	Thr	Ile	Leu	Gly	Glu	Val	Asp
3350						3355					3360			
Gln	Phe	Val	Glu	Ser	Asp	Lys	Thr	Tyr	Asn	Asp	Ala	Pro	His	Ile
3365						3370					3375			
Ile	Asp	Val	Ile	Leu	Pro	Leu	Leu	Cys	Ala	Tyr	Leu	Pro	Phe	Trp
3380						3385					3390			
Trp	Ser	Gln	Gly	Pro	Asp	Asn	Val	Ser	Pro	Thr	Ser	Gly	Asn	His
3395						3400					3405			
Val	Thr	Met	Val	Thr	Ala	Asp	His	Met	Asn	Pro	Leu	Leu	Arg	Asn
3410						3415					3420			
Val	Leu	Lys	Met	Ile	Lys	Lys	Asn	Ile	Gly	Asn	Asp	Asn	Ala	Pro
3425						3430					3435			
Trp	Met	Thr	Arg	Ile	Ala	Ala	Tyr	Thr	Gln	Gln	Ile	Ile	Ile	Asn
3440						3445					3450			
Thr	Ser	Glu	Glu	Leu	Leu	Lys	Asp	Pro	Phe	Leu	Pro	Leu	Ala	Glu
3455						3460					3465			
Arg	Val	Lys	Lys	Arg	Thr	Glu	Asn	Met	Leu	His	Lys	Glu	Asp	Ser
3470						3475					3480			
Met	Arg	Gly	Phe	Ile	Lys	Ser	Ala	Thr	Asp	Asp	Thr	Ser	Gln	Val
3485						3490					3495			
Glu	Thr	Gln	Leu	Gln	Glu	Asp	Trp	Asn	Leu	Leu	Val	Arg	Asp	Ile
3500						3505					3510			
Tyr	Ser	Phe	Tyr	Pro	Leu	Leu	Ile	Lys	Tyr	Val	Asp	Leu	Gln	Arg
3515						3520					3525			
Asn	His	Trp	Leu	Lys	Asp	Asn	Ile	Pro	Glu	Ala	Glu	Glu	Leu	Tyr
3530						3535					3540			
Asn	His	Val	Ala	Glu	Ile	Phe	Asn	Ile	Trp	Ser	Lys	Ser	Gln	Tyr
3545						3550					3555			
Phe	Leu	Lys	Glu	Glu	Gln	Asn	Phe	Ile	Ser	Ala	Asn	Glu	Ile	Asp
3560						3565					3570			

Asn Met	Ala Leu Ile Met	Pro Thr	Ala Thr Arg	Arg	Ser Ala Ile
3575		3580		3585	
Ser Glu	Gly Ala Pro Ala	Val Gly	Gly Lys Val	Lys	Lys Lys Lys
3590		3595		3600	
Lys Asn	Arg Asp Lys Lys	Arg Asp	Lys Asp Lys	Glu	Val Gln Ala
3605		3610		3615	
Ser Leu	Met Val Ala Cys	Leu Lys	Arg Leu Leu	Pro	Val Gly Leu
3620		3625		3630	
Asn Leu	Phe Ala Gly Arg	Glu Gln	Glu Leu Val	Gln	His Cys Lys
3635		3640		3645	
Asp Arg	Tyr Leu Lys Lys	Met Pro	Glu Tyr Asp	Val	Ile Glu Phe
3650		3655		3660	
Ala Arg	Asn Gln Leu Thr	Leu Pro	Asp Lys Leu	Asp	Pro Ser Asp
3665		3670		3675	
Glu Met	Ser Trp Gln His	Tyr Leu	Tyr Ser Lys	Leu	Gly Lys Thr
3680		3685		3690	
Glu Glu	Pro Val Asp Glu	Gln Ala	Leu Glu Lys	Ala	Asn Val Asn
3695		3700		3705	
Ser Asn	Glu Lys Gly Lys	Asp Lys	Thr Gln Glu	Thr	Val Asp Arg
3710		3715		3720	
Ile Val	Ala Met Ala Lys	Val Leu	Phe Gly Leu	His	Met Ile Asp
3725		3730		3735	
His Pro	Gln Gln Gln Ser	Lys Asn	Val Tyr Arg	Ser	Val Val Ser
3740		3745		3750	
Ile Gln	Arg Lys Arg Ala	Val Ile	Ala Cys Phe	Arg	Gln Thr Ser
3755		3760		3765	
Leu His	Ser Leu Pro Arg	His Arg	Ala Cys Asn	Ile	Phe Ala Arg
3770		3775		3780	
Ser Tyr	Tyr Glu Gln Trp	Leu Gln	Glu Glu Asn	Val	Gly Gln Glu
3785		3790		3795	
Val Met	Val Glu Asp Leu	Thr Gln	Thr Phe Glu	Asp	Ser Glu Lys
3800		3805		3810	
Ser Lys	Lys Glu Gly Glu	Glu Thr	Asp Ser Lys	Pro	Asp Pro Leu
3815		3820		3825	
Thr Gln	Leu Val Thr Thr	Phe Cys	Arg Gly Ala	Met	Thr Glu Arg
3830		3835		3840	
Ser Gly	Ala Leu Gln Glu	Asp Leu	Leu Tyr Met	Ser	Tyr Ala Gln
3845		3850		3855	
Ile Ala	Ala Lys Ser Thr	Gly Lys	Glu Glu Glu	Glu	Gly Gly Asp
3860		3865		3870	

Glu	Glu	Gly	Gly	Glu	Gly	Gly	Glu	Glu	Gly	Glu	Gly	Thr	Ser	Ile
3875						3880					3885			
His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His	Gln	Ala
3890						3895					3900			
Arg	Leu	Ser	Asn	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	Leu	His	Ile
3905						3910					3915			
Ser	Ala	Ser	Lys	Gly	Ile	Pro	Ser	Glu	Met	Val	Met	Thr	Thr	Leu
3920						3925					3930			
Asn	Leu	Gly	Ile	Ala	Ile	Leu	Arg	Gly	Gly	Asn	Ile	Asp	Ile	Gln
3935						3940					3945			
Met	Gly	Met	Leu	Asn	His	Leu	Lys	Glu	Lys	Lys	Asp	Val	Gly	Phe
3950						3955					3960			
Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser	Val	Leu	Asp
3965						3970					3975			
Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly	Leu	Gly	Val
3980						3985					3990			
Gly	Ser	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	Asp	Ala	Glu
3995						4000					4005			
Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	Cys	Glu	Gly
4010						4015					4020			
His	Asn	Leu	Glu	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala	Gly	Asn
4025						4030					4035			
Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr	Leu	Leu
4040						4045					4050			
Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr	Ser	Ser
4055						4060					4065			
Lys	Glu	Ile	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe	Lys	Ala
4070						4075					4080			
Ile	Glu	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Ile	Glu	Val	Ile
4085						4090					4095			
Gln	Gly	Pro	Cys	Thr	Leu	Asn	Gln	Gln	Ala	Leu	Ala	His	Ser	Arg
4100						4105					4110			
Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser	His	Met
4115						4120					4125			
Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu	Leu	Lys
4130						4135					4140			
Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Thr	Met	Met	Leu	Ser
4145						4150					4155			
Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln	Met
4160						4165					4170			

Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	Leu	Ile	Leu
4175						4180					4185			
Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Ala	Asp	Leu	Ile	Glu	Ser
4190						4195					4200			
Pro	Ser	Phe	His	Glu	Val	Asp	Met	Lys	Asn	Glu	Gly	Trp	Val	Thr
4205						4210					4215			
Pro	Lys	Asp	Phe	Arg	Glu	Lys	Met	Glu	Gln	Ser	Lys	Asn	Tyr	Thr
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Pro	Glu	Glu	Met	Asp	Phe	Leu	Leu	Ala	Cys	Cys	Glu	Arg	Asn	His
4235						4240					4245			
Glu	Gly	Lys	Ile	Asp	Tyr	Arg	Ala	Phe	Val	Glu	His	Phe	His	Glu
4250						4255					4260			
Pro	Ser	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu	Thr	Asn
4265						4270					4275			
Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala	Arg	Phe	Leu
4280						4285					4290			
Glu	Thr	Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	Glu	Pro	Phe	Leu	Gly
4295						4300					4305			
Arg	Ile	Glu	Ile	Leu	Gly	Ser	Ser	Lys	Arg	Ile	Glu	Arg	Val	Tyr
4310						4315					4320			
Phe	Glu	Ile	Lys	Asp	Ser	Asn	Ile	Glu	Gln	Trp	Glu	Lys	Pro	Gln
4325						4330					4335			
Ile	Arg	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile	Val	Thr	Glu
4340						4345					4350			
Gly	Gly	Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn	Phe	Cys	Glu
4355						4360					4365			
Asp	Ala	Ile	Phe	Glu	Met	Thr	His	Ala	Ser	Gly	Leu	Met	Ala	Thr
4370						4375					4380			
Asp	Asp	Gly	Gly	Gly	Asn	Val	Lys	Arg	Asp	Thr	Ala	Tyr	Ser	Ser
4385						4390					4395			
Tyr	Met	Ser	Glu	Glu	Glu	Glu	Glu	Arg	Ala	Ala	Arg	Asp	Pro	Ile
4400						4405					4410			
Arg	Arg	Thr	Ile	Thr	Ala	Val	Lys	Glu	Gly	Leu	Lys	Phe	Gly	Val
4415						4420					4425			
His	Met	Leu	Ser	Pro	Ala	Asn	Ile	Lys	His	Gln	Ile	Gly	Val	Met
4430						4435					4440			
Gln	Thr	Lys	Ser	Ile	Pro	Glu	Leu	Ile	Val	Gly	Phe	Phe	Lys	Ile
4445						4450					4455			
Ile	Phe	Tyr	Ile	Phe	Tyr	Tyr	Thr	Gly	Tyr	Ala	His	Phe	Cys	Val
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Val	Arg	Tyr	Ile	Phe	Gly	Ile	Leu	Leu	Asn	Leu	Met	Arg	Gly	Pro
4475						4480					4485			
Ala	Pro	Glu	Gln	Glu	Glu	Glu	Pro	Val	Val	Glu	Glu	Glu	Thr	Phe
4490						4495					4500			
Gly	Arg	Ala	Leu	Pro	Pro	Leu	Pro	Leu	Glu	Glu	Pro	Pro	Gly	Thr
4505						4510					4515			
Val	Gln	Ala	Phe	Gly	Leu	Asp	Ile	Asn	Lys	Glu	Glu	Asn	Gly	Met
4520						4525					4530			
Tyr	Lys	Val	Val	Val	His	Glu	Ser	Pro	Ala	Asn	Ser	Ser	Met	Glu
4535						4540					4545			
Glu	Gly	Gly	Glu	Ser	Ser	Pro	Glu	Asp	Gly	Ala	Ala	Ala	Ser	Gly
4550						4555					4560			
Glu	Leu	Val	Glu	Gly	Glu	Pro	His	Gln	Glu	Pro	Ile	Ser	Ile	Val
4565						4570					4575			
Asp	Leu	Leu	Gly	Gly	Glu	Ala	Ala	Lys	Lys	Ala	Ala	Gln	Glu	Arg
4580						4585					4590			
Gln	Glu	Ala	Gln	Lys	Ala	Gln	Glu	Ala	Ala	Met	Ala	Ser	Ile	Glu
4595						4600					4605			
Ala	Glu	Ala	Lys	Lys	Ser	Ser	Ser	Ala	Pro	Gln	Glu	Thr	Pro	Ala
4610						4615					4620			
Val	His	Gln	Ile	Asp	Phe	Ser	Gln	Tyr	Thr	His	Arg	Ala	Val	Ser
4625						4630					4635			
Phe	Leu	Ala	Arg	Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu	Val
4640						4645					4650			
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4670						4675					4680			
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4685						4690					4695			
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4715						4720					4725			
Met	Glu	His	Val	Leu	Arg	Ile	Ala	Ala	Cys	Leu	His	Ser	Leu	Val
4730						4735					4740			
Ser	Leu	Ala	Met	Leu	Ile	Ala	Tyr	Tyr	His	Leu	Lys	Val	Pro	Leu
4745						4750					4755			
Ala	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Ile	Ala	Arg	Arg	Leu	Glu	Phe
4760						4765					4770			

Glu Gly	Leu Phe Ile Ala	Glu	Gln Pro Glu Asp Asp	Asp Phe Lys
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Ser His	Trp Asp Lys Leu Val	Ile Ser Ala Lys	Ser	Phe Pro Val
4790		4795		4800
Asn Tyr	Trp Asp Lys Phe Val	Lys Lys Lys Val	Arg	Gln Lys Tyr
4805		4810		4815
Ser Glu	Thr Tyr Asp Phe Asp	Ser Ile Ser Asn	Leu	Leu Gly Met
4820		4825		4830
Glu Lys	Ser Thr Phe Ala Ala	Gln Glu Ser Glu	Glu	Thr Gly Ile
4835		4840		4845
Phe Lys	Tyr Ile Met Asn Ile	Asp Trp Arg Tyr	Gln	Val Trp Lys
4850		4855		4860
Ala Gly	Val Thr Phe Thr Asp	Asn Ala Phe Leu	Tyr	Ser Leu Trp
4865		4870		4875
Tyr Phe	Ser Phe Ser Val Met	Gly Asn Phe Asn	Asn	Phe Phe Phe
4880		4885		4890
Ala Ala	His Leu Leu Asp Val	Ala Val Gly Phe	Lys	Thr Leu Arg
4895		4900		4905
Thr Ile	Leu Gln Ser Val Thr	His Asn Gly Lys	Gln	Leu Val Leu
4910		4915		4920
Thr Val	Met Leu Leu Thr Ile	Ile Val Tyr Ile	Tyr	Thr Val Ile
4925		4930		4935
Ala Phe	Asn Phe Phe Arg Lys	Phe Tyr Ile Gln	Glu	Glu Asp Glu
4940		4945		4950
Glu Val	Asp Lys Lys Cys His	Asp Met Leu Thr	Cys	Phe Val Phe
4955		4960		4965
His Leu	Tyr Lys Gly Val Arg	Ala Gly Gly Gly	Ile	Gly Asp Glu
4970		4975		4980
Ile Gly	Asp Pro Asp Gly Asp	Asp Tyr Glu Val	Tyr	Arg Ile Ile
4985		4990		4995
Phe Asp	Ile Thr Phe Phe Phe	Phe Val Ile Ile	Ile	Leu Leu Ala
5000		5005		5010
Ile Ile	Gln Gly Leu Ile Ile	Asp Ala Phe Gly	Glu	Leu Arg Asp
5015		5020		5025
Gln Leu	Glu Ser Val Lys Asp	Asn Met Glu Ser	Asn	Cys Phe Ile
5030		5035		5040
Cys Gly	Met Gly Lys Asp Phe	Phe Asp Ile Val	Pro	His Gly Phe
5045		5050		5055
Asp Thr	His Val Gln Lys Glu	His Asn Leu Ala	Asn	Tyr Met Phe
5060		5065		5070

Phe Leu Met His Leu Ile Asn Lys Pro Asp Thr Glu Tyr Thr Gly  
5075 5080 5085

Gln Glu Thr Tyr Val Trp Asn Met Tyr Gln Gln Arg Ser Trp Asp  
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Leu Ser Gly Gly Gly Gly Gly Gly  
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<400> 125

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Arg Thr Glu Asp Met Val Thr Leu Ser Cys Thr Ala Thr Gly Glu Arg  
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Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu  
35 40 45

Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe  
50 55 60

Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
65 70 75 80

Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
85 90 95

Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met  
100 105 110

Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
115 120 125

Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
130 135 140

Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
145 150 155 160

Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His  
165 170 175

Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val  
180 185 190

Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys

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Tyr	Val	Gly	Tyr	Val	Phe	Gly	Gly	Asp	Val	Leu	Arg	Phe	Phe	His	Gly
210						215					220				
Gly	Asp	Glu	Cys	Leu	Thr	Ile	Pro	Ser	Thr	Trp	Gly	Arg	Glu	Ala	Gly
225						230					235				240
Gln	Asn	Ile	Val	Ile	Tyr	Glu	Gly	Gly	Val	Val	Met	Ala	Gln	Ala	Arg
				245					250					255	
Ser	Leu	Trp	Arg	Leu	Glu	Leu	Ala	Arg	Thr	Lys	Trp	Thr	Gly	Gly	Phe
			260					265					270		
Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg	His	Ile	Thr	Thr	Gly	Arg
		275					280					285			
Tyr	Leu	Gly	Val	Asn	Asp	Ser	Asn	Glu	Leu	Ile	Leu	Val	Lys	Lys	Glu
	290					295					300				
Glu	Ala	Ser	Ile	Ala	Thr	Thr	Thr	Phe	Ser	Trp	Gln	Glu	Lys	Asp	Asp
305						310					315				320
Glu	Lys	Lys	Val	Leu	Glu	Asp	Lys	Asp	Leu	Glu	Val	Ile	Gly	Ser	Pro
				325					330					335	
Ile	Ile	Lys	Tyr	Gly	Asp	Thr	Thr	Val	Ile	Val	Gln	His	Cys	Glu	Thr
			340					345					350		
Ser	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr	Glu	Thr	Lys	Lys	Lys	Gly	Val
		355					360					365			
Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile	Leu	His	Glu	Glu	Gly	Lys	Met
	370					375					380				
Asp	Asp	Cys	Leu	Asp	Phe	Ser	Arg	Ser	Gln	Glu	Glu	Glu	Ser	Lys	Thr
385						390					395				400
Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser	Leu	Phe	Thr	Gln	Phe	Ile	Thr
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Ala	Leu	Glu	Thr	Leu	Gln	Ser	Asn	Arg	Arg	His	Ser	Ile	Phe	Phe	Gln
			420					425					430		
Lys	Val	Asn	Leu	Asn	Glu	Met	Val	Met	Cys	Leu	Glu	Asp	Leu	Ile	Asn
		435					440				445				
Tyr	Phe	Ser	Gln	Pro	Glu	Asp	Asp	Met	Glu	His	Glu	Glu	Lys	Gln	Asn
	450					455					460				
Arg	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln	Asp	Leu	Phe	Gln	Glu	Glu	Gly
465						470					475				480
Val	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile	Asp	Lys	Ile	Asn	Ile	Ile	Thr
				485					490					495	
Ser	Gln	Gly	Phe	Leu	Ala	Ser	Phe	Leu	Ala	Gly	Asp	Glu	Thr	Gly	Gln
			500					505					510		
Ser	Trp	Asp	Leu	Ile	Ser	Thr	Tyr	Leu	Tyr	Gln	Leu	Leu	Ala	Ala	Ile



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Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	Ser	Gln	Ala	Ser	Ser	Glu	Gly
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Ser	Gly	Met	Leu	Asp	Val	Leu	His	Cys	Val	Leu	Ile	Asp	Ser	Pro	Glu
				565					570					575	
Ala	Leu	Asn	Met	Met	Arg	Asp	Glu	His	Ile	Lys	Val	Ile	Ile	Ser	Leu
			580					585						590	
Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys	Val	Leu	Asp	Val	Leu	Cys	Ser
		595					600					605			
Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	Arg	Ser	Ser	Gln	Asn	Asn	Ile
610						615						620			
Cys	Asp	Phe	Leu	Leu	Pro	Gly	Lys	Asn	Leu	Leu	Leu	Gln	Thr	Leu	Leu
625					630					635					640
Val	Asp	His	Val	Ala	Ser	Ile	Arg	Pro	Asn	Ile	Phe	Val	Gly	Arg	Val
				645					650					655	
Asp	Gly	Ser	Ser	Met	Tyr	Gln	Lys	Trp	Tyr	Phe	Glu	Val	Thr	Met	Asp
			660					665					670		
His	Ile	Glu	Gln	Thr	Thr	His	Met	Met	Pro	His	Leu	Arg	Ile	Gly	Trp
		675					680					685			
Ala	Asn	Thr	Ser	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Lys	Lys	Trp
		690				695					700				
Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	Tyr	Ser	Phe	Gly	Phe	Asp	Gly
705					710					715					720
Ala	Phe	Leu	Trp	Thr	Gly	Gly	Arg	Lys	Thr	Leu	Val	Val	Asp	Ala	Leu
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Pro	Glu	Glu	Pro	Phe	Ile	Arg	Lys	Gly	Asp	Val	Ile	Gly	Val	Ala	Ile
			740					745					750		
Asp	Leu	Ser	Val	Pro	Ile	Ile	Thr	Phe	Thr	Phe	Asn	Gly	Val	Lys	Val
		755					760					765			
Arg	Gly	Ser	Phe	Arg	Asp	Phe	Asn	Leu	Asp	Gly	Met	Phe	Phe	Pro	Val
		770				775					780				
Met	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys	Arg	Phe	Leu	Phe	Gly	Gly	Asp
785					790					795					800
His	Gly	Arg	Leu	Lys	Phe	Ala	Pro	Pro	Met	Gly	Phe	Ser	Ala	Leu	Val
				805					810					815	
Gln	Cys	Leu	Met	Pro	Gln	Gln	Ile	Leu	Ser	Leu	Asp	Pro	Cys	Phe	Tyr
			820					825					830		
Phe	Gly	Asn	Leu	Ala	Lys	Asn	Val	Leu	Ala	Gly	Pro	Trp	Leu	Ile	Glu

835					840					845					
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Leu	Pro	Ser	Ser	Val	Asp	Gln	Ile	Lys	Glu	Lys	Leu	Ala	Glu	Asn	Ile
865				870					875					880	
His	Glu	Met	Trp	Ala	Leu	Asn	Lys	Ile	Glu	Ala	Gly	Trp	Ser	Trp	Gly
				885					890					895	
Glu	His	Arg	Asp	Asp	Tyr	His	Arg	Ile	His	Pro	Cys	Leu	Thr	His	Phe
			900					905					910		
Glu	Lys	Leu	Pro	Ala	Ala	Glu	Lys	Arg	Tyr	Asp	Asn	Gln	Leu	Ala	Val
		915					920					925			
Gln	Thr	Leu	Lys	Thr	Ile	Ile	Ser	Leu	Gly	Tyr	Tyr	Ile	Thr	Met	Asp
	930						935					940			
Lys	Pro	Pro	Ala	Arg	Ile	Arg	Pro	Val	Arg	Leu	Pro	Asn	Glu	Ile	Phe
945					950					955					960
Met	Gln	Gly	Asn	Gly	Tyr	Lys	Pro	Ala	Pro	Leu	Asp	Leu	Ser	Ala	Val
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Thr	Leu	Thr	Pro	Lys	Leu	Glu	Glu	Leu	Val	Asp	Gln	Leu	Ala	Glu	Asn
			980					985					990		
Thr	His	Asn	Leu	Trp	Ala	Arg	Glu	Arg	Ile	Gln	Gln	Gly	Trp	Thr	Tyr
		995					1000					1005			
Gly	Leu	Asn	Glu	Asp	Ser	Glu	Asn	His	Arg	Ser	Pro	His	Leu	Val	
	1010					1015					1020				
Pro	Tyr	Ala	Lys	Val	Asp	Glu	Ala	Ile	Lys	Lys	Ala	Asn	Arg	Asp	
	1025					1030					1035				
Thr	Ala	Ser	Glu	Thr	Ser	Ala	Asn	Ala	Pro	Gly	Leu	Arg	Ile	Cys	
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Leu	Gly	Ser	Ser	Asp	Gly	Arg	Arg	Asn	Gly	Gly	Thr	Ser	Gly	Arg	
	1055					1060					1065				
Gly	Thr	Thr	Pro	Gln	Val	Arg	Arg	Ile	Pro	Thr	Tyr	Arg	Val	Glu	
	1070					1075					1080				
Arg	Asn	Tyr	Ala	Val	Thr	Ser	Gly	Lys	Trp	Tyr	Phe	Glu	Phe	Glu	
	1085					1090					1095				
Val	Leu	Thr	Ser	Gly	Pro	Met	Arg	Val	Gly	Trp	Ala	Arg	Ala	Asp	
	1100					1105					1110				
Cys	Tyr	Pro	Gly	Ala	Met	Leu	Gly	Ser	Glu	Asp	Thr	Ser	Trp	Ala	
	1115					1120					1125				
Phe	Asp	Gly	His	Asn	Glu	Glu	Lys	Val	Tyr	Gly	Gly	Val	Ser	Glu	
	1130					1135					1140				
Ser	Phe	Gly	Lys	Gln	Cys	Gly	Pro	Gly	Asp	Ile	Val	Gly	Val	Phe	

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Leu Asp 1160	Leu Ala Asp His	Thr 1165	Ile Ser Phe Ser	Leu Asn Gly Glu 1170
Leu Leu 1175	Met Asp Ala Leu	Gly 1180	Gly Glu Thr Thr	Phe Ala Asp Val 1185
Thr Ala 1190	Glu Gly Val Gly	Phe 1195	Val Pro Ala Cys	Thr Leu Gly Val 1200
Gly Gln 1205	Lys Ala Arg Leu	Ile 1210	Tyr Gly Gln Asp	Val Asp Ser Leu 1215
Lys Phe 1220	Phe Thr Thr Cys	Gly 1225	Leu Gln Glu Gly	Tyr Glu Pro Phe 1230
Cys Val 1235	Asn Met Arg Arg	Pro 1240	Val Thr His Trp	Tyr Thr Lys Asp 1245
Gln Pro 1250	Ile Phe Glu Asn	Thr 1255	Glu Glu Met Pro	Asp Cys Arg Ile 1260
Asp Val 1265	Thr Arg Ile Pro	Gly 1270	Gly Ala Asp Thr	Pro Pro His Leu 1275
Lys Ile 1280	Ser His Asn Thr	Phe 1285	Glu Thr Met Glu	Lys Ala Asn Trp 1290
Glu Phe 1295	Leu Arg Leu Ser	Leu 1300	Pro Val Thr Cys	Met Gly Glu Phe 1305
Ile Ser 1310	Glu Gln Glu Lys	Ala 1315	Arg Arg Trp Asp	Glu Ile Lys Asn 1320
Arg Gln 1325	Tyr Arg Leu Met	Arg 1330	Glu Ala Glu Ile	Ala Ala Gln Met 1335
Gln Val 1340	Gln Thr Gln Ala	Ala 1345	His Met Asp His	Met Leu Lys Gly 1350
Gly Phe 1355	Asn Met Asn Asp	Ile 1360	Lys Gly Leu Thr	Arg Asn Phe Asp 1365
Glu His 1370	Ala Asp Ala Glu	Ala 1375	Asp His Met Met	Arg Gly Pro Asn 1380
Arg Pro 1385	Pro Arg Lys Gly	Ser 1390	Leu Thr Arg Asn	Ile Thr Phe Glu 1395
Thr Asp 1400	Met Ser Ala Ala	Leu 1405	Asp Glu Met Gln	Arg Ser Thr Ser 1410
Val Leu 1415	Asp Met Asn Gly	Leu 1420	Gly Glu Glu Met	Asp Asp Lys Lys 1425
Lys Arg 1430	Gly Arg Ser Pro	Phe 1435	Lys Phe Phe Ser	Lys Lys Ser Arg 1440
Asp Gln	Ser Arg Glu Lys Met	Gly Ala Arg Thr	Leu Asp Thr Ser	

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Leu Glu Arg Arg Asn Thr Val	Ala His Gly Arg Asn Val Val Asn	
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Gln Gln Met Thr Thr Arg Ala	Pro Thr Leu Arg Leu Asn Asn Ala	
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Glu Ile Pro Pro Ser Pro Val	Pro Gln Gly Pro Lys Gln Leu Ser	
1490	1495	1500
Gly Ser Asn Leu Gly Gln Gln	Pro Val Glu Thr Ser Gly Asp Glu	
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Met Phe Asp Ala Glu Cys Leu	Lys Leu Ile Asn Glu Tyr Phe Tyr	
1520	1525	1530
Gly Val Arg Ile Phe Pro Gly	Gln Asp Pro Thr His Val Tyr Val	
1535	1540	1545
Gly Trp Val Thr Thr Gln Tyr	His Leu His Ser Arg Glu Phe Asn	
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Lys Asn Lys Val Arg Arg Gly	Ser Val Tyr Ile Glu Asp Asp Tyr	
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Glu Met Ala Ile Glu Arg Ile	Asp Arg Gln Ser Cys Tyr Val Val	
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Arg Ala Asp Glu Leu Phe Asn	Glu Val Thr Gln Asp Ala Ser Gly	
1595	1600	1605
Lys Gly Ala Ser Gln Gly Met	Phe Val Gly Cys Phe Val Asp Thr	
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Ala Thr Gly Ile Ile Arg Phe	Thr Cys Glu Gly Lys Asp Thr Ser	
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His Arg Trp Met Met Glu Pro	Asp Thr Lys Leu Phe Pro Ala Ile	
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Phe Val Glu Ala Thr Ser Lys	Glu Ile Leu Gln Ile Glu Leu Gly	
1655	1660	1665
Arg Thr Pro Thr Thr Leu Pro	Leu Ser Ala Ala Val Leu Pro Thr	
1670	1675	1680
Ser Asp Lys His Ile Asn Pro	Gln Ser Pro Pro Arg Leu Lys Val	
1685	1690	1695
Gln Cys Leu Arg Pro His Gln	Trp Ala Arg Val Pro Asn Thr Ala	
1700	1705	1710
Leu Gln Val His Ala Leu Lys	Leu Ser Asp Val Arg Gly Trp Ser	
1715	1720	1725
Met Leu Cys Glu Asp Pro Val	Ser Met Leu Ala Leu His Ile Pro	
1730	1735	1740
Glu Glu Asp Arg Cys Ile Asp	Ile Leu Glu Leu Ile Glu Met Asp	

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Lys Leu Leu Ser Phe His	Ala His Ser Leu Thr	Leu Tyr Ala Ala
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Leu Cys Tyr Gln Ser Asn	Tyr Arg Ala Ala His	Ala Leu Cys Gln
1775	1780	1785
His Val Asp Gln Lys Gln	Leu Leu Tyr Ala Ile	Arg Ser Glu Tyr
1790	1795	1800
Met Ser Gly Pro Leu Arg	Gln Gly Phe Tyr Asp	Leu Leu Ile Ala
1805	1810	1815
Leu His Leu Glu Ser His	Ala Thr Thr Met Glu	Val Cys Lys Asn
1820	1825	1830
Glu Tyr Ile Thr Pro Leu	Gly Ala Glu Leu Lys	Glu Leu Tyr Ser
1835	1840	1845
Asp Glu Glu Met Gln His	Ser Leu Arg Ser Leu	Val Thr Glu Ser
1850	1855	1860
Val Arg Pro Gln Leu Arg	Met Thr Glu Ile Thr	Glu Pro Ile Pro
1865	1870	1875
Asp Ile Asp Gln Leu Tyr	Ser Pro Lys Phe Pro	Leu Glu Val Val
1880	1885	1890
Arg Gln Phe Val Met Glu	Ala Leu Lys Asp Ala	Val Glu Ile Asn
1895	1900	1905
Gln Val His Asn Arg Asp	Pro Ile Gly Trp Thr	Asn Glu Asn Leu
1910	1915	1920
Phe Leu Pro Leu Ile Lys	Leu Thr Asp Arg Leu	Leu Leu Val Gly
1925	1930	1935
Val Leu Thr Asp Glu Asp	Val Gln Arg Leu Leu	Val Met Ile Asp
1940	1945	1950
Pro Glu Thr Trp Asp Gln	Ala Phe Glu Arg Glu	Gly Lys Asp Glu
1955	1960	1965
His Arg Lys Gly Leu Leu	Thr Met Lys Met Ala	Glu Gly Ala Lys
1970	1975	1980
Leu Gln Met Cys Tyr Leu	Leu His His Leu Tyr	Asp Thr Gln Leu
1985	1990	1995
Arg His Arg Val Glu Ser	Ile Ile Ala Phe Ser	His Asp Phe Val
2000	2005	2010
Gly Asp Leu Gln Thr Asp	Gln Leu Arg Arg Tyr	Ile Glu Ile Lys
2015	2020	2025
Gln Ser Asp Leu Pro Ser	Ala Val Ala Ala Lys	Lys Thr Lys Glu
2030	2035	2040
Phe Arg Cys Pro Pro Arg	Glu Gln Met Asn Gln	Ile Leu Cys Phe

2045				2050				2055						
Lys	Asn	Leu	Glu	Pro	Asp	Asp	Gln	Asp	Asn	Cys	Thr	Cys	Gly	Leu
2060						2065					2070			
Glu	Leu	Arg	Gly	Arg	Leu	Gly	Asp	Phe	His	Asp	Ser	Leu	Met	Gln
2075						2080					2085			
Lys	Val	Ser	Leu	Asn	Ala	Leu	Gln	Glu	Pro	Asp	Gly	Val	Glu	Gly
2090						2095					2100			
Thr	Ala	Ile	Glu	Glu	Val	Lys	Thr	Gly	Pro	Ile	Thr	Lys	Ile	Tyr
2105						2110					2115			
Asn	Phe	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Gly	Pro	Lys	Glu
2120						2125					2130			
Val	Glu	Glu	Pro	Glu	Lys	Lys	Thr	Pro	Glu	Glu	Val	Phe	Arg	Lys
2135						2140					2145			
Val	Leu	Ile	Lys	Thr	Ile	Val	Ser	Trp	Ala	Glu	Glu	Ser	Gln	Ile
2150						2155					2160			
Glu	Asn	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Leu	Arg
2165						2170					2175			
Gln	Tyr	Asp	Thr	Val	Gly	Glu	Leu	Val	Arg	Ala	Leu	Glu	Lys	Thr
2180						2185					2190			
Tyr	Val	Ile	Asn	Thr	Arg	Ala	Arg	Asp	Asp	Val	Ala	Glu	Met	Trp
2195						2200					2205			
Val	Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser
2210						2215					2220			
Gln	Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val
2225						2230					2235			
Asn	Asn	Ala	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Ile	Leu
2240						2245					2250			
Arg	Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Ile	Gly
2255						2260					2265			
Arg	Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Thr	Gln	Ser	Glu	Val
2270						2275					2280			
Ala	Glu	Gly	Ala	Pro	Ser	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu	Met
2285						2290					2295			
Val	Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Gly
2300						2305					2310			
Arg	Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu	Leu
2315						2320					2325			
Asp	Asn	Ala	Asn	Ile	Leu	Leu	Ala	Arg	Pro	Ser	Leu	Arg	Gly	Ser
2330						2335					2340			
Thr	Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr	Glu

2345	2350	2355
Leu Ala Leu Ala Leu Arg Glu His Tyr Leu Glu Lys Ile Ala Val		
2360	2365	2370
Tyr Leu Ser Arg Cys Gly Leu Gln Ser Asn Ser Glu Leu Val Glu		
2375	2380	2385
Lys Gly Tyr Pro Asp Leu Gly Trp Asp Pro Val Glu Gly Glu Arg		
2390	2395	2400
Tyr Leu Asp Phe Leu Arg Tyr Cys Val Trp Val Asn Gly Glu Ser		
2405	2410	2415
Val Glu Glu Asn Ala Asn Leu Val Ile Arg Leu Leu Ile Arg Arg		
2420	2425	2430
Pro Glu Cys Leu Gly Pro Ala Leu Arg Gly Glu Gly Glu Gly Leu		
2435	2440	2445
Phe Arg Ala Ile Val Glu Ala Asn Arg Met Ser Glu Arg Ile Ser		
2450	2455	2460
Asp Arg Cys Lys Met Gln Asp Glu Ala Glu Gly Thr Ile Ala Gly		
2465	2470	2475
Leu Asn Phe Thr His Pro Leu Pro Glu Gly Glu Glu Asp Glu Asp		
2480	2485	2490
Tyr Ile Asp Thr Gly Ala Ala Ile Leu Asn Phe Tyr Cys Thr Leu		
2495	2500	2505
Val Asp Leu Leu Gly Arg Cys Ala Pro Asp Ala Ser Val Ile Glu		
2510	2515	2520
Gln Gly Lys Asn Glu Ser Leu Arg Ala Arg Ala Ser Leu Arg Ser		
2525	2530	2535
Leu Val Pro Leu Glu Asp Leu Gln Gly Val Leu Ser Leu Lys Phe		
2540	2545	2550
Thr Leu Ser Gln Thr Ala Pro Gly Glu Glu Lys Pro Lys Ser Asp		
2555	2560	2565
Met Pro Ser Gly Leu Leu Pro Asn Asn Lys Gln Ser Ile Val Leu		
2570	2575	2580
Phe Leu Glu Arg Val Tyr Gly Ile Glu Ala Gln Asp Leu Phe Tyr		
2585	2590	2595
Arg Leu Leu Glu Asp Ala Phe Leu Pro Asp Leu Arg Thr Ala Thr		
2600	2605	2610
Ile Leu Asp Lys Ser Asp Gly Ser Glu Ser Asp Met Ala Leu Ala		
2615	2620	2625
Met Asn Arg Tyr Ile Gly Asn Ser Ile Leu Pro Leu Leu Ile Lys		
2630	2635	2640
His Ser Lys Phe Tyr Asn Glu Ala Glu Asn Tyr Ala Ser Leu Leu		

2645	2650	2655
Asp Ala Thr Leu His Thr	Val Tyr Arg Leu Ser	Lys Asn Arg Met
2660	2665	2670
Leu Thr Lys Gly Gln Arg	Glu Ala Val Ser Asp	Phe Leu Val Ala
2675	2680	2685
Leu Thr Ser Gln Met Gln	Pro Ala Met Leu Leu	Lys Leu Leu Arg
2690	2695	2700
Lys Leu Thr Val Asp Val	Ser Lys Leu Ser Glu	Tyr Thr Thr Val
2705	2710	2715
Ala Leu Arg Leu Leu Thr	Leu His Phe Asp Arg	Cys Ala Lys Tyr
2720	2725	2730
Tyr Gly Ser Thr Gln Gly	Gln Gly Ser Tyr Gly	Ala Ser Ser Asp
2735	2740	2745
Glu Glu Lys Arg Leu Thr	Met Leu Leu Phe Ser	Asn Ile Phe Asp
2750	2755	2760
Ser Leu Ser Asn Met Asp	Tyr Asp Pro Glu Leu	Phe Gly Lys Ala
2765	2770	2775
Leu Pro Cys Leu Ile Ala	Ile Gly Cys Ala Leu	Pro Pro Asp Tyr
2780	2785	2790
Ser Leu Ser Lys Asn Thr	Asp Glu Asp Tyr Tyr	Gly Arg Gln Met
2795	2800	2805
Gly Ala Pro Asp Gln Pro	Gln Tyr Met Pro Asn	Pro Ile Asp Thr
2810	2815	2820
Asn Asn Val His Leu Asp	Asn Asp Leu Asn Ser	Leu Val Gln Lys
2825	2830	2835
Phe Ser Glu His Tyr His	Asp Ala Trp Ala Ser	Arg Arg Leu Glu
2840	2845	2850
Gly Gly Trp Thr Tyr Gly	Asp Ile Arg Ser Asp	Asn Asp Arg Lys
2855	2860	2865
His Pro Arg Leu Lys Pro	Tyr Asn Met Leu Ser	Glu Tyr Glu Arg
2870	2875	2880
Glu Arg Tyr Arg Asp Pro	Val Arg Glu Cys Leu	Lys Gly Leu Leu
2885	2890	2895
Ala Ile Gly Trp Thr Val	Glu His Ser Glu Val	Glu Val Pro Leu
2900	2905	2910
Asn His Arg Gly Ser Thr	Arg Arg Gln Ser Lys	Pro Gln Ile Asn
2915	2920	2925
Glu Phe Gln Asn Glu Gly	Ser Pro Phe Asn Tyr	Asn Pro His Pro
2930	2935	2940
Val Asp Met Ser Asn Leu Thr	Leu Ser Arg Glu Met	Gln Asn Met



2945	2950	2955
Ala Glu Arg Leu Ala Glu Asn Ser His Asp Ile Trp Ala Lys Lys 2960 2965 2970		
Lys Asn Glu Glu Leu Asn Gly Cys Gly Gly Val Ile His Pro Gln 2975 2980 2985		
Leu Val Pro Tyr Asp Leu Leu Thr Asp Lys Glu Lys Lys Lys Asp 2990 2995 3000		
Arg Glu Arg Ser Gln Glu Phe Leu Lys Tyr Met Gln Tyr Gln Gly 3005 3010 3015		
Tyr Lys Leu His Lys Pro Ser Lys Gly Gly Ala Val Glu Glu Gly 3020 3025 3030		
Gly Ala Thr Gln Ala Ala Val Glu Leu Arg Phe Ser Tyr Ser Leu 3035 3040 3045		
Leu Glu Lys Leu Ile Gln Tyr Leu Asp Arg Ala Thr Ile Asn Met 3050 3055 3060		
Lys Leu Leu Lys Pro Ser Thr Thr Phe Ser Arg Arg Ser Ser Phe 3065 3070 3075		
Lys Thr Ala Thr Arg Asp Ile Lys Phe Phe Ser Lys Val Val Leu 3080 3085 3090		
Pro Leu Met Glu Lys Tyr Phe Ser Thr His Arg Asn Tyr Phe Ile 3095 3100 3105		
Ala Ile Ala Thr Ala Thr Asn Asn Ile Gly Ala Ala Ser Leu Lys 3110 3115 3120		
Glu Lys Glu Met Val Ala Ser Ile Phe Cys Lys Leu Ala Ala Leu 3125 3130 3135		
Leu Arg Asn Arg Leu Ser Ala Phe Gly Pro Asp Val Arg Ile Thr 3140 3145 3150		
Val Arg Cys Leu Gln Val Leu Val Lys Gly Ile Asp Ala Arg Thr 3155 3160 3165		
Leu Thr Lys Asn Cys Pro Glu Phe Ile Arg Thr Ser Met Leu Thr 3170 3175 3180		
Phe Phe Asn Gln Thr Ser Asp Asp Leu Gly Asn Thr Ile Leu Asn 3185 3190 3195		
Gln Gln Asp Gly Lys Tyr Ser His Leu Arg Gly Thr His Leu Lys 3200 3205 3210		
Thr Ser Thr Ser Leu Gly Tyr Val Asn Gln Val Val Leu Pro Val 3215 3220 3225		
Leu Thr Ala Met Phe Asp His Leu Ala Ala Cys Asp Tyr Gly Ser 3230 3235 3240		
Asp Leu Leu Leu Asp Glu Ile Gln Val Ala Ser Tyr Lys Ile Leu		

3245	3250	3255
Ala Ala Leu Tyr His Leu	Gly Thr Asp Gly Thr	Leu Thr His Asp
3260	3265	3270
Arg Lys Tyr Leu Lys Thr	Glu Ile Glu Arg His	Arg Pro Ala Leu
3275	3280	3285
Gly Ser Cys Leu Gly Ala Tyr	Ser Ser Cys Phe	Pro Val Ala Phe
3290	3295	3300
Leu Glu Pro His Leu Asn Lys	His Asn Gln Tyr	Ser Leu Leu Asn
3305	3310	3315
Arg Ile Ala Asp His Ser Leu	Glu Ala Gln Asp	Ile Met Val Lys
3320	3325	3330
Met Glu Ser Cys Met Pro Asn	Leu Glu Thr Ile	Leu Gly Glu Val
3335	3340	3345
Asp Gln Phe Val Glu Ser Asp	Lys Thr Tyr Asn	Asp Ala Pro His
3350	3355	3360
Ile Ile Asp Val Ile Leu Pro	Leu Leu Cys Ala Tyr	Leu Pro Phe
3365	3370	3375
Trp Trp Ser Gln Gly Pro Asp	Asn Val Ser Pro Thr	Ser Gly Asn
3380	3385	3390
His Val Thr Met Val Thr Ala	Asp His Met Asn	Pro Leu Leu Arg
3395	3400	3405
Asn Val Leu Lys Met Ile Lys	Lys Asn Ile Gly Asn	Asp Asn Ala
3410	3415	3420
Pro Trp Met Thr Arg Ile Ala	Ala Tyr Thr Gln Gln	Ile Ile Ile
3425	3430	3435
Asn Thr Ser Glu Glu Leu Leu	Lys Asp Pro Phe Leu	Pro Leu Ala
3440	3445	3450
Glu Arg Val Lys Lys Arg Thr	Glu Asn Met Leu His	Lys Glu Asp
3455	3460	3465
Ser Met Arg Gly Phe Ile Lys	Ser Ala Thr Asp Asp	Thr Ser Gln
3470	3475	3480
Val Glu Thr Gln Leu Gln Glu	Asp Trp Asn Leu Leu	Val Arg Asp
3485	3490	3495
Ile Tyr Ser Phe Tyr Pro Leu	Leu Ile Lys Tyr Val	Asp Leu Gln
3500	3505	3510
Arg Asn His Trp Leu Lys Asp	Asn Ile Pro Glu Ala	Glu Glu Leu
3515	3520	3525
Tyr Asn His Val Ala Glu Ile	Phe Asn Ile Trp Ser	Lys Ser Gln
3530	3535	3540
Tyr Phe Leu Lys Glu Glu Gln	Asn Phe Ile Ser Ala	Asn Glu Ile

3545	3550	3555
Asp Asn Met Ala Leu Ile	Met Pro Thr Ala Thr	Arg Arg Ser Ala
3560	3565	3570
Ile Ser Glu Gly Ala Pro	Ala Val Gly Gly Lys	Val Lys Lys Lys
3575	3580	3585
Lys Lys Asn Arg Asp Lys	Lys Arg Asp Lys Asp	Lys Glu Val Gln
3590	3595	3600
Ala Ser Leu Met Val Ala	Cys Leu Lys Arg Leu	Leu Pro Val Gly
3605	3610	3615
Leu Asn Leu Phe Ala Gly	Arg Glu Gln Glu Leu	Val Gln His Cys
3620	3625	3630
Lys Asp Arg Tyr Leu Lys	Lys Met Pro Glu Tyr	Asp Val Ile Glu
3635	3640	3645
Phe Ala Arg Asn Gln Leu	Thr Leu Pro Asp Lys	Leu Asp Pro Ser
3650	3655	3660
Asp Glu Met Ser Trp Gln	His Tyr Leu Tyr Ser	Lys Leu Gly Lys
3665	3670	3675
Thr Glu Glu Pro Val Asp	Glu Gln Ala Leu Glu	Lys Ala Asn Val
3680	3685	3690
Asn Ser Asn Glu Lys Gly	Lys Asp Lys Thr Gln	Glu Thr Val Asp
3695	3700	3705
Arg Ile Val Ala Met Ala	Lys Val Leu Phe Gly	Leu His Met Ile
3710	3715	3720
Asp His Pro Gln Gln Gln	Ser Lys Asn Val Tyr	Arg Ser Val Val
3725	3730	3735
Ser Ile Gln Arg Lys Arg	Ala Val Ile Ala Cys	Phe Arg Gln Thr
3740	3745	3750
Ser Leu His Ser Leu Pro	Arg His Arg Ala Cys	Asn Ile Phe Ala
3755	3760	3765
Arg Ser Tyr Tyr Glu Gln	Trp Leu Gln Glu Glu	Asn Val Gly Gln
3770	3775	3780
Glu Val Met Val Glu Asp	Leu Thr Gln Thr Phe	Glu Asp Ser Glu
3785	3790	3795
Lys Ser Lys Lys Glu Gly	Glu Glu Thr Asp Ser	Lys Pro Asp Pro
3800	3805	3810
Leu Thr Gln Leu Val Thr	Thr Phe Cys Arg Gly	Ala Met Thr Glu
3815	3820	3825
Arg Ser Gly Ala Leu Gln	Glu Asp Leu Leu Tyr	Met Ser Tyr Ala
3830	3835	3840
Gln Ile Ala Ala Lys Ser	Thr Gly Lys Glu Glu	Glu Glu Gly Gly

3845	3850	3855
Asp Glu Glu Gly Gly Glu Gly Gly Glu Glu Gly Glu Gly Thr Ser		
3860	3865	3870
Ile His Glu Gln Glu Met Glu Lys Gln Lys Leu Leu Phe His Gln		
3875	3880	3885
Ala Arg Leu Ser Asn Arg Gly Val Ala Glu Met Val Leu Leu His		
3890	3895	3900
Ile Ser Ala Ser Lys Gly Ile Pro Ser Glu Met Val Met Thr Thr		
3905	3910	3915
Leu Asn Leu Gly Ile Ala Ile Leu Arg Gly Gly Asn Ile Asp Ile		
3920	3925	3930
Gln Met Gly Met Leu Asn His Leu Lys Glu Lys Lys Asp Val Gly		
3935	3940	3945
Phe Phe Thr Ser Ile Ala Gly Leu Met Asn Ser Cys Ser Val Leu		
3950	3955	3960
Asp Leu Asp Ala Phe Glu Arg Asn Thr Lys Ala Glu Gly Leu Gly		
3965	3970	3975
Val Gly Ser Glu Gly Ala Ala Gly Glu Lys Asn Met His Asp Ala		
3980	3985	3990
Glu Phe Thr Cys Ala Leu Phe Arg Phe Ile Gln Leu Thr Cys Glu		
3995	4000	4005
Gly His Asn Leu Glu Trp Gln Asn Tyr Leu Arg Thr Gln Ala Gly		
4010	4015	4020
Asn Thr Thr Thr Val Asn Val Val Ile Cys Thr Val Asp Tyr Leu		
4025	4030	4035
Leu Arg Leu Gln Glu Ser Ile Met Asp Phe Tyr Trp His Tyr Ser		
4040	4045	4050
Ser Lys Glu Ile Ile Asp Pro Ala Gly Lys Ala Asn Phe Phe Lys		
4055	4060	4065
Ala Ile Glu Val Ala Ser Gln Val Phe Asn Thr Leu Ile Glu Val		
4070	4075	4080
Ile Gln Gly Pro Cys Thr Leu Asn Gln Gln Ala Leu Ala His Ser		
4085	4090	4095
Arg Leu Trp Asp Ala Val Gly Gly Phe Leu Phe Leu Phe Ser His		
4100	4105	4110
Met Gln Asp Lys Leu Ser Lys His Ser Ser Gln Val Asp Leu Leu		
4115	4120	4125
Lys Glu Leu Leu Asn Leu Gln Lys Asp Met Ile Thr Met Met Leu		
4130	4135	4140
Ser Met Leu Glu Gly Asn Val Val Asn Gly Thr Ile Gly Lys Gln		

4145	4150	4155
Met Val Asp Thr Leu Val	Glu Ser Ala Ser Asn Val	Glu Leu Ile
4160	4165	4170
Leu Lys Tyr Phe Asp Met	Phe Leu Lys Leu Ala Asp	Leu Ile Glu
4175	4180	4185
Ser Pro Ser Phe His Glu	Val Asp Met Lys Asn Glu	Gly Trp Val
4190	4195	4200
Thr Pro Lys Asp Phe Arg	Glu Lys Met Glu Gln Ser	Lys Asn Tyr
4205	4210	4215
Thr Pro Glu Glu Met Asp	Phe Leu Leu Ala Cys Cys	Glu Arg Asn
4220	4225	4230
His Glu Gly Lys Ile Asp	Tyr Arg Ala Phe Val Glu	His Phe His
4235	4240	4245
Glu Pro Ser Lys Glu Ile	Gly Phe Asn Leu Ala Val	Leu Leu Thr
4250	4255	4260
Asn Leu Ser Glu His Met	Pro Asn Glu Pro Arg Leu	Ala Arg Phe
4265	4270	4275
Leu Glu Thr Ala Gly Ser	Val Leu Asn Tyr Phe Glu	Pro Phe Leu
4280	4285	4290
Gly Arg Ile Glu Ile Leu	Gly Ser Ser Lys Arg Ile	Glu Arg Val
4295	4300	4305
Tyr Phe Glu Ile Lys Asp	Ser Asn Ile Glu Gln Trp	Glu Lys Pro
4310	4315	4320
Gln Ile Arg Glu Ser Lys	Arg Ala Phe Phe Tyr Ser	Ile Val Thr
4325	4330	4335
Glu Gly Gly Asp Lys Glu	Lys Leu Glu Ala Phe Val	Asn Phe Cys
4340	4345	4350
Glu Asp Ala Ile Phe Glu	Met Thr His Ala Ser Gly	Leu Met Ala
4355	4360	4365
Thr Asp Asp Gly Gly Gly	Asn Val Lys Arg Asp Thr	Ala Tyr Ser
4370	4375	4380
Ser Tyr Met Ser Glu Glu	Glu Glu Arg Ala Ala	Arg Asp Pro
4385	4390	4395
Ile Arg Arg Thr Ile Thr	Ala Val Lys Glu Gly Leu	Lys Phe Gly
4400	4405	4410
Val His Met Leu Ser Pro	Ala Asn Ile Lys His Gln	Ile Gly Val
4415	4420	4425
Met Gln Thr Lys Ser Ile	Pro Glu Leu Ile Val Gly	Phe Phe Lys
4430	4435	4440
Ile Ile Phe Tyr Ile Phe	Tyr Tyr Thr Gly Tyr Ala	His Phe Cys

4445	4450	4455
Val Val Arg Tyr Ile Phe Gly	Ile Leu Leu Asn Leu	Met Arg Gly
4460	4465	4470
Pro Ala Pro Glu Gln Glu Glu	Glu Pro Val Val Glu	Glu Glu Thr
4475	4480	4485
Phe Gly Arg Ala Leu Pro Pro	Leu Pro Leu Glu Glu	Pro Pro Gly
4490	4495	4500
Thr Val Gln Ala Phe Gly Leu	Asp Ile Asn Lys Glu	Glu Asn Gly
4505	4510	4515
Met Tyr Lys Val Val Val His	Glu Ser Pro Ala Asn	Ser Ser Met
4520	4525	4530
Glu Glu Gly Gly Glu Ser Ser	Pro Glu Asp Gly Ala	Ala Ala Ser
4535	4540	4545
Gly Glu Leu Val Glu Gly Glu	Pro His Gln Glu Pro	Ile Ser Ile
4550	4555	4560
Val Asp Leu Leu Gly Gly Glu	Ala Ala Lys Lys Ala	Ala Gln Glu
4565	4570	4575
Arg Gln Glu Ala Gln Lys Ala	Gln Glu Ala Ala Met	Ala Ser Ile
4580	4585	4590
Glu Ala Glu Ala Lys Lys Ser	Ser Ser Ala Pro Gln	Glu Thr Pro
4595	4600	4605
Ala Val His Gln Ile Asp Phe	Ser Gln Tyr Thr His	Arg Ala Val
4610	4615	4620
Ser Phe Leu Ala Arg Asn Phe	Tyr Asn Leu Lys Tyr	Val Ala Leu
4625	4630	4635
Val Leu Ala Phe Ser Ile Asn	Phe Met Leu Leu Phe	Tyr Lys Val
4640	4645	4650
Thr Ser Phe Thr Glu Glu Ala	Asp Ser Ser Ala Glu	Glu Glu Leu
4655	4660	4665
Ile Leu Gly Ser Gly Ser Gly	Gly Gly Ala Asp Ile	Thr Gly Ser
4670	4675	4680
Gly Phe Gly Gly Ser Gly Asp	Gly Gly Ser Gly Asp	Gly Glu Met
4685	4690	4695
Glu Asp Glu Ile Pro Glu Leu	Val His Val Asp Glu	Asp Phe Phe
4700	4705	4710
Tyr Met Glu His Val Leu Arg	Ile Ala Ala Cys Leu	His Ser Leu
4715	4720	4725
Val Ser Leu Ala Met Leu Ile	Ala Tyr Tyr His Leu	Lys Val Pro
4730	4735	4740
Leu Ala Ile Phe Lys Arg Glu	Lys Glu Ile Ala Arg	Arg Leu Glu

4745	4750	4755
Phe Glu Gly Leu Phe Ile	Ala Glu Gln Pro Glu	Asp Asp Asp Phe
4760	4765	4770
Lys Ser His Trp Asp Lys	Leu Val Ile Ser Ala	Lys Ser Phe Pro
4775	4780	4785
Val Asn Tyr Trp Asp Lys	Phe Val Lys Lys Lys	Val Arg Gln Lys
4790	4795	4800
Tyr Ser Glu Thr Tyr Asp	Phe Asp Ser Ile Ser	Asn Leu Leu Gly
4805	4810	4815
Met Glu Lys Ser Thr Phe	Ala Ala Gln Glu Ser	Glu Glu Thr Gly
4820	4825	4830
Ile Phe Lys Tyr Ile Met	Asn Ile Asp Trp Arg	Tyr Gln Val Trp
4835	4840	4845
Lys Ala Gly Val Thr Phe	Thr Asp Asn Ala Phe	Leu Tyr Ser Leu
4850	4855	4860
Trp Tyr Phe Ser Phe Ser	Val Met Gly Asn Phe	Asn Asn Phe Phe
4865	4870	4875
Phe Ala Ala His Leu Leu	Asp Val Ala Val Gly	Phe Lys Thr Leu
4880	4885	4890
Arg Thr Ile Leu Gln Ser	Val Thr His Asn Gly	Lys Gln Leu Val
4895	4900	4905
Leu Thr Val Met Leu Leu	Thr Ile Ile Val Tyr	Ile Tyr Thr Val
4910	4915	4920
Ile Ala Phe Asn Phe Phe	Arg Lys Phe Tyr Ile	Gln Glu Glu Asp
4925	4930	4935
Glu Glu Val Asp Lys Lys	Cys His Asp Met Leu	Thr Cys Phe Val
4940	4945	4950
Phe His Leu Tyr Lys Gly	Val Arg Ala Gly Gly	Gly Ile Gly Asp
4955	4960	4965
Glu Ile Gly Asp Pro Asp	Gly Asp Asp Tyr Glu	Val Tyr Arg Ile
4970	4975	4980
Ile Phe Asp Ile Thr Phe	Phe Phe Val Ile Ile	Ile Ile Leu Leu
4985	4990	4995
Ala Ile Ile Gln Gly Leu	Ile Ile Asp Ala Phe	Gly Glu Leu Arg
5000	5005	5010
Asp Gln Leu Glu Ser Val	Lys Asp Asn Met Glu	Ser Asn Cys Phe
5015	5020	5025
Ile Cys Gly Met Gly Lys	Asp Phe Phe Asp Ile	Val Pro His Gly
5030	5035	5040
Phe Asp Thr His Val Gln	Lys Glu His Asn Leu	Ala Asn Tyr Met

5045                      5050                      5055  
 Phe Phe Leu Met His Leu Ile Asn Lys Pro Asp Thr Glu Tyr Thr  
     5060                      5065                      5070  
 Gly Gln Glu Thr Tyr Val Trp Asn Met Tyr Gln Gln Arg Ser Trp  
     5075                      5080                      5085  
 Asp Phe Phe Pro Val Gly Asp Cys Phe Arg Lys Gln Tyr Glu Asp  
     5090                      5095                      5100  
 Glu Leu Ser Gly Gly Gly Gly Gly Gly  
     5105                      5110  
  
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 Arg Thr Glu Asp Met Val Thr Leu Ser Cys Thr Ala Thr Gly Glu Arg  
                     20                      25                      30  
 Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu Glu  
                     35                      40                      45  
 Asn Ile Ala Asp Lys Asn Val Pro Pro Asp Leu Ser Gln Cys Val Phe  
                     50                      55                      60  
 Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val Thr  
 65                      70                      75                      80  
 Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg Thr  
                     85                      90                      95  
 Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His His Asn Ser Asp Met  
                     100                      105                      110  
 Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Asn Asp Lys Leu Ser Phe  
                     115                      120                      125  
 Asp Val Gly Leu Gln Glu His Ser Gln Gly Glu Ala Cys Trp Trp Thr  
                     130                      135                      140  
 Val His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg Val  
 145                      150                      155                      160  
 Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu His  
                     165                      170                      175  
 Thr Thr Lys Glu Asn Glu Gln Ser Ile Val Asn Ala Ser Phe His Val  
                     180                      185                      190



Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met Lys  
 195 200 205  
 Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His Gly  
 210 215 220  
 Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Gly Arg Glu Ala Gly  
 225 230 235 240  
 Gln Asn Ile Val Ile Tyr Glu Gly Gly Val Val Met Ala Gln Ala Arg  
 245 250 255  
 Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Thr Gly Gly Phe  
 260 265 270  
 Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Ile Thr Thr Gly Arg  
 275 280 285  
 Tyr Leu Gly Val Asn Asp Ser Asn Glu Leu Ile Leu Val Lys Lys Glu  
 290 295 300  
 Glu Ala Ser Ile Ala Thr Thr Thr Phe Ser Trp Gln Glu Lys Asp Asp  
 305 310 315 320  
 Glu Lys Lys Val Leu Glu Asp Lys Asp Leu Glu Val Ile Gly Ser Pro  
 325 330 335  
 Ile Ile Lys Tyr Gly Asp Thr Thr Val Ile Val Gln His Cys Glu Thr  
 340 345 350  
 Ser Leu Trp Leu Ser Tyr Lys Ser Tyr Glu Thr Lys Lys Lys Gly Val  
 355 360 365  
 Gly Lys Val Glu Glu Lys Gln Ala Ile Leu His Glu Glu Gly Lys Met  
 370 375 380  
 Asp Asp Cys Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser Lys Thr  
 385 390 395 400  
 Ala Arg Val Ile Arg Lys Cys Ser Ser Leu Phe Thr Gln Phe Ile Thr  
 405 410 415  
 Ala Leu Glu Thr Leu Gln Ser Asn Arg Arg His Ser Ile Phe Phe Gln  
 420 425 430  
 Lys Val Asn Leu Asn Glu Met Val Met Cys Leu Glu Asp Leu Ile Asn  
 435 440 445  
 Tyr Phe Ser Gln Pro Glu Asp Asp Met Glu His Glu Glu Lys Gln Asn  
 450 455 460  
 Arg Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu Glu Gly  
 465 470 475 480  
 Val Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Ile Asn Ile Ile Thr  
 485 490 495  
 Ser Gln Gly Phe Leu Ala Ser Phe Leu Ala Gly Asp Glu Thr Gly Gln  
 500 505 510

Ser Trp Asp Leu Ile Ser Thr Tyr Leu Tyr Gln Leu Leu Ala Ala Ile  
 515 520 525  
 Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser Asn Arg  
 530 535 540  
 Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Ser Glu Gly  
 545 550 555 560  
 Ser Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser Pro Glu  
 565 570 575  
 Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile Ser Leu  
 580 585 590  
 Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu Cys Ser  
 595 600 605  
 Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn Asn Ile  
 610 615 620  
 Cys Asp Phe Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr Leu Leu  
 625 630 635 640  
 Val Asp His Val Ala Ser Ile Arg Pro Asn Ile Phe Val Gly Arg Val  
 645 650 655  
 Asp Gly Ser Ser Met Tyr Gln Lys Trp Tyr Phe Glu Val Thr Met Asp  
 660 665 670  
 His Ile Glu Gln Thr Thr His Met Met Pro His Leu Arg Ile Gly Trp  
 675 680 685  
 Ala Asn Thr Ser Gly Tyr Val Pro Tyr Pro Gly Gly Gly Lys Lys Trp  
 690 695 700  
 Gly Gly Asn Gly Val Gly Asp Asp Leu Tyr Ser Phe Gly Phe Asp Gly  
 705 710 715 720  
 Ala Phe Leu Trp Thr Gly Gly Arg Lys Thr Leu Val Val Asp Ala Leu  
 725 730 735  
 Pro Glu Glu Pro Phe Ile Arg Lys Gly Asp Val Ile Gly Val Ala Ile  
 740 745 750  
 Asp Leu Ser Val Pro Ile Ile Thr Phe Thr Phe Asn Gly Val Lys Val  
 755 760 765  
 Arg Gly Ser Phe Arg Asp Phe Asn Leu Asp Gly Met Phe Phe Pro Val  
 770 775 780  
 Met Ser Cys Ser Ser Lys Leu Ser Cys Arg Phe Leu Phe Gly Gly Asp  
 785 790 795 800  
 His Gly Arg Leu Lys Phe Ala Pro Pro Met Gly Phe Ser Ala Leu Val  
 805 810 815  
 Gln Cys Leu Met Pro Gln Gln Ile Leu Ser Leu Asp Pro Cys Phe Tyr  
 820 825 830

Phe Gly Asn Leu Ala Lys Asn Val Leu Ala Gly Pro Trp Leu Ile Glu  
 835 840 845  
 Asp Asp Thr Ala Phe Val Pro Lys Pro Val Asp Thr Thr Gly Val Thr  
 850 855 860  
 Leu Pro Ser Ser Val Asp Gln Ile Lys Glu Lys Leu Ala Glu Asn Ile  
 865 870 875 880  
 His Glu Met Trp Ala Leu Asn Lys Ile Glu Ala Gly Trp Ser Trp Gly  
 885 890 895  
 Glu His Arg Asp Asp Tyr His Arg Ile His Pro Cys Leu Thr His Phe  
 900 905 910  
 Glu Lys Leu Pro Ala Ala Glu Lys Arg Tyr Asp Asn Gln Leu Ala Val  
 915 920 925  
 Gln Thr Leu Lys Thr Ile Ile Ser Leu Gly Tyr Tyr Ile Thr Met Asp  
 930 935 940  
 Lys Pro Pro Ala Arg Ile Arg Pro Val Arg Leu Pro Asn Glu Ile Phe  
 945 950 955 960  
 Met Gln Gly Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser Ala Val  
 965 970 975  
 Thr Leu Thr Pro Lys Leu Glu Glu Leu Val Asp Gln Leu Ala Glu Asn  
 980 985 990  
 Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp Thr Tyr  
 995 1000 1005  
 Gly Leu Asn Glu Asp Ser Glu Asn His Arg Ser Pro His Leu Val  
 1010 1015 1020  
 Pro Tyr Ala Lys Val Asp Glu Ala Ile Lys Lys Ala Asn Arg Asp  
 1025 1030 1035  
 Thr Ala Ser Glu Thr Ser Ala Asn Ala Pro Gly Leu Arg Ile Cys  
 1040 1045 1050  
 Leu Gly Ser Ser Asp Gly Arg Arg Asn Gly Gly Thr Ser Gly Arg  
 1055 1060 1065  
 Gly Thr Thr Pro Gln Val Arg Arg Ile Pro Thr Tyr Arg Val Glu  
 1070 1075 1080  
 Arg Asn Tyr Ala Val Thr Ser Gly Lys Trp Tyr Phe Glu Phe Glu  
 1085 1090 1095  
 Val Leu Thr Ser Gly Pro Met Arg Val Gly Trp Ala Arg Ala Asp  
 1100 1105 1110  
 Cys Tyr Pro Gly Ala Met Leu Gly Ser Glu Asp Thr Ser Trp Ala  
 1115 1120 1125  
 Phe Asp Gly His Asn Val Thr Lys Met His Ala Gly Ser Ile Glu  
 1130 1135 1140

His	Phe	Gly	Val	Arg	Tyr	Glu	Ala	Gly	Asp	Val	Ile	Gly	Cys	Phe
1145						1150					1155			
Ile	Asp	Val	Lys	Glu	Gln	Thr	Ile	Ser	Phe	Ser	Leu	Asn	Gly	Glu
1160						1165					1170			
Leu	Leu	Met	Asp	Ala	Leu	Gly	Gly	Glu	Thr	Thr	Phe	Ala	Asp	Val
1175						1180					1185			
Thr	Ala	Glu	Gly	Val	Gly	Phe	Val	Pro	Ala	Cys	Thr	Leu	Gly	Val
1190						1195					1200			
Gly	Gln	Lys	Ala	Arg	Leu	Ile	Tyr	Gly	Gln	Asp	Val	Asp	Ser	Leu
1205						1210					1215			
Lys	Phe	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	Phe
1220						1225					1230			
Cys	Val	Asn	Met	Arg	Arg	Pro	Val	Thr	His	Trp	Tyr	Thr	Lys	Asp
1235						1240					1245			
Gln	Pro	Ile	Phe	Glu	Asn	Thr	Glu	Glu	Met	Pro	Asp	Cys	Arg	Ile
1250						1255					1260			
Asp	Val	Thr	Arg	Ile	Pro	Gly	Gly	Ala	Asp	Thr	Pro	Pro	His	Leu
1265						1270					1275			
Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Lys	Ala	Asn	Trp
1280						1285					1290			
Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Thr	Cys	Met	Gly	Glu	Phe
1295						1300					1305			
Ile	Ser	Glu	Gln	Glu	Lys	Ala	Arg	Arg	Trp	Asp	Glu	Ile	Lys	Asn
1310						1315					1320			
Arg	Gln	Tyr	Arg	Leu	Met	Arg	Glu	Ala	Glu	Ile	Ala	Ala	Gln	Met
1325						1330					1335			
Gln	Val	Gln	Thr	Gln	Ala	Ala	His	Met	Asp	His	Met	Leu	Lys	Gly
1340						1345					1350			
Gly	Phe	Asn	Met	Asn	Asp	Ile	Lys	Gly	Leu	Thr	Arg	Asn	Phe	Asp
1355						1360					1365			
Glu	His	Ala	Asp	Ala	Glu	Ala	Asp	His	Met	Met	Arg	Gly	Pro	Asn
1370						1375					1380			
Arg	Pro	Pro	Arg	Lys	Gly	Ser	Leu	Thr	Arg	Asn	Ile	Thr	Phe	Glu
1385						1390					1395			
Thr	Asp	Met	Ser	Ala	Ala	Leu	Asp	Glu	Met	Gln	Arg	Ser	Thr	Ser
1400						1405					1410			
Val	Leu	Asp	Met	Asn	Gly	Leu	Gly	Glu	Glu	Met	Asp	Asp	Lys	Lys
1415						1420					1425			
Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys	Phe	Phe	Ser	Lys	Lys	Ser	Arg
1430						1435					1440			

Asp	Gln	Ser	Arg	Glu	Lys	Met	Gly	Ala	Arg	Thr	Leu	Asp	Thr	Ser
1445						1450					1455			
Leu	Glu	Arg	Arg	Asn	Thr	Val	Ala	His	Gly	Arg	Asn	Val	Val	Asn
1460						1465					1470			
Gln	Gln	Met	Thr	Thr	Arg	Ala	Pro	Thr	Leu	Arg	Leu	Asn	Asn	Ala
1475						1480					1485			
Glu	Ile	Pro	Pro	Ser	Pro	Val	Pro	Gln	Gly	Pro	Lys	Gln	Leu	Ser
1490						1495					1500			
Gly	Ser	Asn	Leu	Gly	Gln	Gln	Pro	Val	Glu	Thr	Ser	Gly	Asp	Glu
1505						1510					1515			
Met	Phe	Asp	Ala	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu	Tyr	Phe	Tyr
1520						1525					1530			
Gly	Val	Arg	Ile	Phe	Pro	Gly	Gln	Asp	Pro	Thr	His	Val	Tyr	Val
1535						1540					1545			
Gly	Trp	Val	Thr	Thr	Gln	Tyr	His	Leu	His	Ser	Arg	Glu	Phe	Asn
1550						1555					1560			
Lys	Asn	Lys	Val	Arg	Arg	Gly	Ser	Val	Tyr	Ile	Glu	Asp	Asp	Tyr
1565						1570					1575			
Glu	Met	Ala	Ile	Glu	Arg	Ile	Asp	Arg	Gln	Ser	Cys	Tyr	Val	Val
1580						1585					1590			
Arg	Ala	Asp	Glu	Leu	Phe	Asn	Glu	Val	Thr	Gln	Asp	Ala	Ser	Gly
1595						1600					1605			
Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Val	Gly	Cys	Phe	Val	Asp	Thr
1610						1615					1620			
Ala	Thr	Gly	Ile	Ile	Arg	Phe	Thr	Cys	Glu	Gly	Lys	Asp	Thr	Ser
1625						1630					1635			
His	Arg	Trp	Met	Met	Glu	Pro	Asp	Thr	Lys	Leu	Phe	Pro	Ala	Ile
1640						1645					1650			
Phe	Val	Glu	Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile	Glu	Leu	Gly
1655						1660					1665			
Arg	Thr	Pro	Thr	Thr	Leu	Pro	Leu	Ser	Ala	Ala	Val	Leu	Pro	Thr
1670						1675					1680			
Ser	Asp	Lys	His	Ile	Asn	Pro	Gln	Ser	Pro	Pro	Arg	Leu	Lys	Val
1685						1690					1695			
Gln	Cys	Leu	Arg	Pro	His	Gln	Trp	Ala	Arg	Val	Pro	Asn	Thr	Ala
1700						1705					1710			
Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Asp	Val	Arg	Gly	Trp	Ser
1715						1720					1725			
Met	Leu	Cys	Glu	Asp	Pro	Val	Ser	Met	Leu	Ala	Leu	His	Ile	Pro
1730						1735					1740			

Glu Glu	Asp Arg Cys Ile	Asp	Ile Leu Glu Leu	Ile	Glu Met Asp
1745		1750		1755	
Lys Leu	Leu Ser Phe His	Ala	His Ser Leu Thr	Leu	Tyr Ala Ala
1760		1765		1770	
Leu Cys	Tyr Gln Ser Asn	Tyr	Arg Ala Ala His	Ala	Leu Cys Gln
1775		1780		1785	
His Val	Asp Gln Lys Gln	Leu	Leu Tyr Ala Ile	Arg	Ser Glu Tyr
1790		1795		1800	
Met Ser	Gly Pro Leu Arg	Gln	Gly Phe Tyr Asp	Leu	Leu Ile Ala
1805		1810		1815	
Leu His	Leu Glu Ser His	Ala	Thr Thr Met Glu	Val	Cys Lys Asn
1820		1825		1830	
Glu Tyr	Ile Thr Pro Leu	Gly	Ala Glu Leu Lys	Glu	Leu Tyr Ser
1835		1840		1845	
Asp Glu	Glu Met Gln His	Ser	Leu Arg Ser Leu	Val	Thr Glu Ser
1850		1855		1860	
Val Arg	Pro Gln Leu Arg	Met	Thr Glu Ile Thr	Glu	Pro Ile Pro
1865		1870		1875	
Asp Ile	Asp Gln Leu Tyr	Ser	Pro Lys Phe Pro	Leu	Glu Val Val
1880		1885		1890	
Arg Gln	Phe Val Met Glu	Ala	Leu Lys Asp Ala	Val	Glu Ile Asn
1895		1900		1905	
Gln Val	His Asn Arg Asp	Pro	Ile Gly Trp Thr	Asn	Glu Asn Leu
1910		1915		1920	
Phe Leu	Pro Leu Ile Lys	Leu	Thr Asp Arg Leu	Leu	Leu Val Gly
1925		1930		1935	
Val Leu	Thr Asp Glu Asp	Val	Gln Arg Leu Leu	Val	Met Ile Asp
1940		1945		1950	
Pro Glu	Thr Trp Asp Gln	Ala	Phe Glu Arg Glu	Gly	Lys Asp Glu
1955		1960		1965	
His Arg	Lys Gly Leu Leu	Thr	Met Lys Met Ala	Glu	Gly Ala Lys
1970		1975		1980	
Leu Gln	Met Cys Tyr Leu	Leu	His His Leu Tyr	Asp	Thr Gln Leu
1985		1990		1995	
Arg His	Arg Val Glu Ser	Ile	Ile Ala Phe Ser	His	Asp Phe Val
2000		2005		2010	
Gly Asp	Leu Gln Thr Asp	Gln	Leu Arg Arg Tyr	Ile	Glu Ile Lys
2015		2020		2025	
Gln Ser	Asp Leu Pro Ser	Ala	Val Ala Ala Lys	Lys	Thr Lys Glu
2030		2035		2040	

Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Gln	Ile	Leu	Cys	Phe
2045						2050					2055			
Lys	Asn	Leu	Glu	Pro	Asp	Asp	Gln	Asp	Asn	Cys	Thr	Cys	Gly	Leu
2060						2065					2070			
Glu	Leu	Arg	Gly	Arg	Leu	Gly	Asp	Phe	His	Asp	Ser	Leu	Met	Gln
2075						2080					2085			
Lys	Val	Ser	Leu	Asn	Ala	Leu	Gln	Glu	Pro	Asp	Gly	Val	Glu	Gly
2090						2095					2100			
Thr	Ala	Ile	Glu	Glu	Val	Lys	Thr	Gly	Pro	Ile	Thr	Lys	Ile	Tyr
2105						2110					2115			
Asn	Phe	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	Gly	Pro	Lys	Glu
2120						2125					2130			
Val	Glu	Glu	Pro	Glu	Lys	Lys	Thr	Pro	Glu	Glu	Val	Phe	Arg	Lys
2135						2140					2145			
Val	Leu	Ile	Lys	Thr	Ile	Val	Ser	Trp	Ala	Glu	Glu	Ser	Gln	Ile
2150						2155					2160			
Glu	Asn	Pro	Lys	Leu	Val	Arg	Glu	Met	Phe	Ser	Leu	Leu	Leu	Arg
2165						2170					2175			
Gln	Tyr	Asp	Thr	Val	Gly	Glu	Leu	Val	Arg	Ala	Leu	Glu	Lys	Thr
2180						2185					2190			
Tyr	Val	Ile	Asn	Thr	Arg	Ala	Arg	Asp	Asp	Val	Ala	Glu	Met	Trp
2195						2200					2205			
Val	Gly	Leu	Ser	Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser
2210						2215					2220			
Gln	Glu	Glu	Glu	Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val
2225						2230					2235			
Asn	Asn	Ala	Thr	Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Ile	Leu
2240						2245					2250			
Arg	Val	His	Glu	Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Ile	Gly
2255						2260					2265			
Arg	Arg	Ala	Gln	Ala	Gln	Ser	Asp	Ala	Pro	Thr	Gln	Ser	Glu	Val
2270						2275					2280			
Ala	Glu	Gly	Ala	Pro	Ser	Lys	Glu	Lys	Asp	Thr	Ser	His	Glu	Met
2285						2290					2295			
Val	Val	Ala	Cys	Cys	Arg	Phe	Leu	Cys	Tyr	Phe	Cys	Arg	Thr	Gly
2300						2305					2310			
Arg	Gln	Asn	Gln	Lys	Ala	Met	Phe	Asp	His	Phe	Asp	Phe	Leu	Leu
2315						2320					2325			
Asp	Asn	Ala	Asn	Ile	Leu	Leu	Ala	Arg	Pro	Ser	Leu	Arg	Gly	Ser
2330						2335					2340			

Thr	Pro	Leu	Asp	Val	Ala	Tyr	Ser	Ser	Leu	Met	Glu	Asn	Thr	Glu
2345						2350					2355			
Leu	Ala	Leu	Ala	Leu	Arg	Glu	His	Tyr	Leu	Glu	Lys	Ile	Ala	Val
2360						2365					2370			
Tyr	Leu	Ser	Arg	Cys	Gly	Leu	Gln	Ser	Asn	Ser	Glu	Leu	Val	Glu
2375						2380					2385			
Lys	Gly	Tyr	Pro	Asp	Leu	Gly	Trp	Asp	Pro	Val	Glu	Gly	Glu	Arg
2390						2395					2400			
Tyr	Leu	Asp	Phe	Leu	Arg	Tyr	Cys	Val	Trp	Val	Asn	Gly	Glu	Ser
2405						2410					2415			
Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg	Arg
2420						2425					2430			
Pro	Glu	Cys	Leu	Gly	Pro	Ala	Leu	Arg	Gly	Glu	Gly	Glu	Gly	Leu
2435						2440					2445			
Phe	Arg	Ala	Ile	Val	Glu	Ala	Asn	Arg	Met	Ser	Glu	Arg	Ile	Ser
2450						2455					2460			
Asp	Arg	Cys	Lys	Met	Gln	Asp	Glu	Ala	Glu	Gly	Thr	Ile	Ala	Gly
2465						2470					2475			
Leu	Asn	Phe	Thr	His	Pro	Leu	Pro	Glu	Gly	Glu	Glu	Asp	Glu	Asp
2480						2485					2490			
Tyr	Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu
2495						2500					2505			
Val	Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Ser	Val	Ile	Glu
2510						2515					2520			
Gln	Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ser	Leu	Arg	Ser
2525						2530					2535			
Leu	Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Lys	Phe
2540						2545					2550			
Thr	Leu	Ser	Gln	Thr	Ala	Pro	Gly	Glu	Glu	Lys	Pro	Lys	Ser	Asp
2555						2560					2565			
Met	Pro	Ser	Gly	Leu	Leu	Pro	Asn	Asn	Lys	Gln	Ser	Ile	Val	Leu
2570						2575					2580			
Phe	Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Ala	Gln	Asp	Leu	Phe	Tyr
2585						2590					2595			
Arg	Leu	Leu	Glu	Asp	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Thr	Ala	Thr
2600						2605					2610			
Ile	Leu	Asp	Lys	Ser	Asp	Gly	Ser	Glu	Ser	Asp	Met	Ala	Leu	Ala
2615						2620					2625			
Met	Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys
2630						2635					2640			



His	Ser	Lys	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu	Leu
2645						2650					2655			
Asp	Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met
2660						2665					2670			
Leu	Thr	Lys	Gly	Gln	Arg	Glu	Ala	Val	Ser	Asp	Phe	Leu	Val	Ala
2675						2680					2685			
Leu	Thr	Ser	Gln	Met	Gln	Pro	Ala	Met	Leu	Leu	Lys	Leu	Leu	Arg
2690						2695					2700			
Lys	Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val
2705						2710					2715			
Ala	Leu	Arg	Leu	Leu	Thr	Leu	His	Phe	Asp	Arg	Cys	Ala	Lys	Tyr
2720						2725					2730			
Tyr	Gly	Ser	Thr	Gln	Gly	Gln	Gly	Ser	Tyr	Gly	Ala	Ser	Ser	Asp
2735						2740					2745			
Glu	Glu	Lys	Arg	Leu	Thr	Met	Leu	Leu	Phe	Ser	Asn	Ile	Phe	Asp
2750						2755					2760			
Ser	Leu	Ser	Asn	Met	Asp	Tyr	Asp	Pro	Glu	Leu	Phe	Gly	Lys	Ala
2765						2770					2775			
Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr
2780						2785					2790			
Ser	Leu	Ser	Lys	Asn	Thr	Asp	Glu	Asp	Tyr	Tyr	Gly	Arg	Gln	Met
2795						2800					2805			
Gly	Ala	Pro	Asp	Gln	Pro	Gln	Tyr	Met	Pro	Asn	Pro	Ile	Asp	Thr
2810						2815					2820			
Asn	Asn	Val	His	Leu	Asp	Asn	Asp	Leu	Asn	Ser	Leu	Val	Gln	Lys
2825						2830					2835			
Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Arg	Leu	Glu
2840						2845					2850			
Gly	Gly	Trp	Thr	Tyr	Gly	Asp	Ile	Arg	Ser	Asp	Asn	Asp	Arg	Lys
2855						2860					2865			
His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Ser	Glu	Tyr	Glu	Arg
2870						2875					2880			
Glu	Arg	Tyr	Arg	Asp	Pro	Val	Arg	Glu	Cys	Leu	Lys	Gly	Leu	Leu
2885						2890					2895			
Ala	Ile	Gly	Trp	Thr	Val	Glu	His	Ser	Glu	Val	Glu	Val	Pro	Leu
2900						2905					2910			
Asn	His	Arg	Gly	Ser	Thr	Arg	Arg	Gln	Ser	Lys	Pro	Gln	Ile	Asn
2915						2920					2925			
Glu	Phe	Gln	Asn	Glu	Gly	Ser	Pro	Phe	Asn	Tyr	Asn	Pro	His	Pro
2930						2935					2940			

Val	Asp	Met	Ser	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn	Met
2945						2950					2955			
Ala	Glu	Arg	Leu	Ala	Glu	Asn	Ser	His	Asp	Ile	Trp	Ala	Lys	Lys
2960						2965					2970			
Lys	Asn	Glu	Glu	Leu	Asn	Gly	Cys	Gly	Gly	Val	Ile	His	Pro	Gln
2975						2980					2985			
Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Lys	Lys	Asp
2990						2995					3000			
Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Met	Gln	Tyr	Gln	Gly
3005						3010					3015			
Tyr	Lys	Leu	His	Lys	Pro	Ser	Lys	Gly	Gly	Ala	Val	Glu	Glu	Gly
3020						3025					3030			
Gly	Ala	Thr	Gln	Ala	Ala	Val	Glu	Leu	Arg	Phe	Ser	Tyr	Ser	Leu
3035						3040					3045			
Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Leu	Asp	Arg	Ala	Thr	Ile	Asn	Met
3050						3055					3060			
Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe
3065						3070					3075			
Lys	Thr	Ala	Thr	Arg	Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu
3080						3085					3090			
Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile
3095						3100					3105			
Ala	Ile	Ala	Thr	Ala	Thr	Asn	Asn	Ile	Gly	Ala	Ala	Ser	Leu	Lys
3110						3115					3120			
Glu	Lys	Glu	Met	Val	Ala	Ser	Ile	Phe	Cys	Lys	Leu	Ala	Ala	Leu
3125						3130					3135			
Leu	Arg	Asn	Arg	Leu	Ser	Ala	Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr
3140						3145					3150			
Val	Arg	Cys	Leu	Gln	Val	Leu	Val	Lys	Gly	Ile	Asp	Ala	Arg	Thr
3155						3160					3165			
Leu	Thr	Lys	Asn	Cys	Pro	Glu	Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr
3170						3175					3180			
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3185						3190					3195			
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3200						3205					3210			
Thr	Ser	Thr	Ser	Leu	Gly	Tyr	Val	Asn	Gln	Val	Val	Leu	Pro	Val
3215						3220					3225			
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Asp	Leu	Leu	Leu	Asp	Glu	Ile	Gln	Val	Ala	Ser	Tyr	Lys	Ile	Leu
3245						3250					3255			
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3275						3280					3285			
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3290						3295					3300			
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Met	Glu	Ser	Cys	Met	Pro	Asn	Leu	Glu	Thr	Ile	Leu	Gly	Glu	Val
3335						3340					3345			
Asp	Gln	Phe	Val	Glu	Ser	Asp	Lys	Thr	Tyr	Asn	Asp	Ala	Pro	His
3350						3355					3360			
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3365						3370					3375			
Trp	Trp	Ser	Gln	Gly	Pro	Asp	Asn	Val	Ser	Pro	Thr	Ser	Gly	Asn
3380						3385					3390			
His	Val	Thr	Met	Val	Thr	Ala	Asp	His	Met	Asn	Pro	Leu	Leu	Arg
3395						3400					3405			
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Pro	Trp	Met	Thr	Arg	Ile	Ala	Ala	Tyr	Thr	Gln	Gln	Ile	Ile	Ile
3425						3430					3435			
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3440						3445					3450			
Glu	Arg	Val	Lys	Lys	Arg	Thr	Glu	Asn	Met	Leu	His	Lys	Glu	Asp
3455						3460					3465			
Ser	Met	Arg	Gly	Phe	Ile	Lys	Ser	Ala	Thr	Asp	Asp	Thr	Ser	Gln
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Ser Met	Leu Glu Gly Asn Val	Val Asn Gly Thr Ile	Gly Lys Gln
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Met Val	Asp Thr Leu Val Glu	Ser Ala Ser Asn Val	Glu Leu Ile
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His Glu	Gly Lys Ile Asp Tyr	Arg Ala Phe Val Glu	His Phe His
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Ser Tyr	Met Ser Glu Glu Glu	Glu Glu Arg Ala Ala	Arg Asp Pro
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Val His	Met Leu Ser Pro Ala	Asn Ile Lys His Gln	Ile Gly Val
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Arg Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu  
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caa aac aaa ttc cgg gca ctc cga aac cgt cag gac ctg ttc caa gag Gln Asn Lys Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu 465 470 475 480			1440
gaa ggc ata ctg aac ctg atc ctc gaa gct ata gac aag atc aac gtc Glu Gly Ile Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Ile Asn Val 485 490 495			1488
atc acg tcc cag ggg ttc ctc gct gga ttc ctg gcg gga gac gaa tct Ile Thr Ser Gln Gly Phe Leu Ala Gly Phe Leu Ala Gly Asp Glu Ser 500 505 510			1536
gga cag agc tgg gaa atg ata tct gga tat ttg tat cag ttg ctg gcg Gly Gln Ser Trp Glu Met Ile Ser Gly Tyr Leu Tyr Gln Leu Leu Ala 515 520 525			1584
gca ata ata aag ggc aac cac acg aac tgc gcg cag ttc gcg aac tcg Ala Ile Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser 530 535 540			1632
aac cgc ctc aac tgg ctg ttc tcg cgc ctc ggc tcg cag gcc tcg ggc Asn Arg Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Gly 545 550 555 560			1680
gag ggc acc ggc atg ctc gac gtg ctg cac tgc gtg ctt ata gac tcg Glu Gly Thr Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser 565 570 575			1728
cct gaa gct ctc aat atg atg agg gac gaa cac ata aaa gtg ata atc Pro Glu Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile 580 585 590			1776
tct cta tta gaa aag cat ggg cgc gac cct aaa gta cta gat gtg cta Ser Leu Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu			1824

595					600					605						
tgt	tcg	ctg	tgc	gtc	ggg	aac	ggc	gtc	gcg	gtg	cgc	tcg	tca	cag	aac	1872
Cys	Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	Arg	Ser	Ser	Gln	Asn	
	610					615					620					
aac	atc	tgt	gac	tac	tta	ctg	ccc	ggc	aag	aac	ctg	ttg	ctg	caa	act	1920
Asn	Ile	Cys	Asp	Tyr	Leu	Leu	Pro	Gly	Lys	Asn	Leu	Leu	Leu	Gln	Thr	
625					630					635					640	
gcg	ctc	gtg	gat	cac	gta	tct	agt	gtc	cgt	ccg	aac	atc	ttc	gtg	ggg	1968
Ala	Leu	Val	Asp	His	Val	Ser	Ser	Val	Arg	Pro	Asn	Ile	Phe	Val	Gly	
				645					650					655		
cga	gta	gaa	ggg	tcg	gca	gtg	tac	cgc	aaa	tgg	tac	ttc	gag	gtg	act	2016
Arg	Val	Glu	Gly	Ser	Ala	Val	Tyr	Arg	Lys	Trp	Tyr	Phe	Glu	Val	Thr	
			660					665					670			
atg	gac	cac	ata	gag	aag	acc	aca	cat	atg	atg	cca	cat	cta	cgc	ata	2064
Met	Asp	His	Ile	Glu	Lys	Thr	Thr	His	Met	Met	Pro	His	Leu	Arg	Ile	
		675					680					685				
gga	tgg	gcc	aac	act	act	ggg	tat	gtc	cca	tac	ccg	ggc	ggg	ggc	gag	2112
Gly	Trp	Ala	Asn	Thr	Thr	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Glu	
	690					695					700					
aaa	tgg	gga	ggg	aac	ggc	gtg	gga	gat	gac	ctg	tac	tcg	tac	ggg	ttc	2160
Lys	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	Tyr	Ser	Tyr	Gly	Phe	
705					710					715					720	
gac	ggc	gcc	tac	ctc	tgg	tcc	ggg	ggg	agg	aag	act	ccc	gtc	aat	agg	2208
Asp	Gly	Ala	Tyr	Leu	Trp	Ser	Gly	Gly	Arg	Lys	Thr	Pro	Val	Asn	Arg	
				725					730					735		
act	cat	gct	gaa	gag	cct	tat	att	aga	aaa	ggg	gac	gtg	ata	ggg	tgc	2256
Thr	His	Ala	Glu	Glu	Pro	Tyr	Ile	Arg	Lys	Gly	Asp	Val	Ile	Gly	Cys	
			740					745					750			
gca	ttg	gac	ctg	acg	gta	ccc	ata	atc	aac	ttc	atg	ttc	aac	gga	gtg	2304
Ala	Leu	Asp	Leu	Thr	Val	Pro	Ile	Ile	Asn	Phe	Met	Phe	Asn	Gly	Val	
		755				760						765				
cgg	gtg	acg	gga	tcc	ttc	acc	aac	ttc	aat	ctg	gaa	ggc	atg	ttc	ttc	2352
Arg	Val	Thr	Gly	Ser	Phe	Thr	Asn	Phe	Asn	Leu	Glu	Gly	Met	Phe	Phe	
	770					775					780					
ccg	gtc	atc	agc	tgc	tct	agt	aag	ctg	agt	tgt	cgg	ttc	ctg	ctg	ggc	2400
Pro	Val	Ile	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys	Arg	Phe	Leu	Leu	Gly	
785					790					795					800	
gga	gaa	cac	ggg	cgt	ctc	cgg	tac	gcg	gct	cca	gaa	ggc	tac	tct	ccc	2448
Gly	Glu	His	Gly	Arg	Leu	Arg	Tyr	Ala	Ala	Pro	Glu	Gly	Tyr	Ser	Pro	
				805					810					815		
ttg	gtg	gag	tct	ctc	ctg	ccg	cag	cag	atc	ctc	agc	ctg	gag	ccg	tgc	2496
Leu	Val	Glu	Ser	Leu	Leu	Pro	Gln	Gln	Ile	Leu	Ser	Leu	Glu	Pro	Cys	
			820					825					830			
ttc	tac	ttc	ggc	aac	ctg	tcc	aag	cgg	gcc	ttg	gct	gga	cct	ccg	cta	2544
Phe	Tyr	Phe	Gly	Asn	Leu	Ser	Lys	Arg	Ala	Leu	Ala	Gly	Pro	Pro	Leu	

835	840	845	
gta cag gac gat acg gcc ttc gtg cct aca cct gtt gat act tta cag Val Gln Asp Asp Thr Ala Phe Val Pro Thr Pro Val Asp Thr Leu Gln 850 855 860			2592
att act ctg cct aca tat gtg gaa caa att aga gat aag cta gct gaa Ile Thr Leu Pro Thr Tyr Val Glu Gln Ile Arg Asp Lys Leu Ala Glu 865 870 875 880			2640
aat ata cac gaa atg tgg gct atg aat aag atc gaa gca ggc tgg atg Asn Ile His Glu Met Trp Ala Met Asn Lys Ile Glu Ala Gly Trp Met 885 890 895			2688
tac ggc gac cag aga gaa gac ttg cac aag atc cac ccc tgc ctc gtg Tyr Gly Asp Gln Arg Glu Asp Leu His Lys Ile His Pro Cys Leu Val 900 905 910			2736
ccc ttc gag cga ctc cca cct gct gag aaa cga tac gac ata caa ctc Pro Phe Glu Arg Leu Pro Pro Ala Glu Lys Arg Tyr Asp Ile Gln Leu 915 920 925			2784
gct gtg cag aca ctc aag act atc ctg gct ctg ggc tac tac atc agc Ala Val Gln Thr Leu Lys Thr Ile Leu Ala Leu Gly Tyr Tyr Ile Ser 930 935 940			2832
tta gat aag cct cca gca cgc atc cgc aac gtt cgt ctg ccc aac gaa Leu Asp Lys Pro Pro Ala Arg Ile Arg Asn Val Arg Leu Pro Asn Glu 945 950 955 960			2880
cct ttc atg cag tcc aac ggc tac aag cca gca cca ctc gac ctg agt Pro Phe Met Gln Ser Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser 965 970 975			2928
gct gtc acc ctg aca ccc aag atg gat gag cta gta gac cag ctg gct Ala Val Thr Leu Thr Pro Lys Met Asp Glu Leu Val Asp Gln Leu Ala 980 985 990			2976
gag aac acc cac aac ctt tgg gcc agg gag agg ata cag cag gga tgg Glu Asn Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp 995 1000 1005			3024
act tat gga ctt aat gag gac tcg gac atg cat cgt tcc ccg cac Thr Tyr Gly Leu Asn Glu Asp Ser Asp Met His Arg Ser Pro His 1010 1015 1020			3069
ctg gtg cca tac ccg aag gtt gac gat gcc atc aag aag gcc aac Leu Val Pro Tyr Pro Lys Val Asp Asp Ala Ile Lys Lys Ala Asn 1025 1030 1035			3114
agg gac aca gcc tcg gag act gtg agg acc ctg ctg gtc tac ggg Arg Asp Thr Ala Ser Glu Thr Val Arg Thr Leu Leu Val Tyr Gly 1040 1045 1050			3159
tat atg ctg gac ccg cct act ggg gag cag cat gaa gca ctc ttg Tyr Met Leu Asp Pro Pro Thr Gly Glu Gln His Glu Ala Leu Leu 1055 1060 1065			3204
ttg gaa gcg tca aaa cag aag caa gca gac ttc aga aca tac cgc Leu Glu Ala Ser Lys Gln Lys Gln Ala Asp Phe Arg Thr Tyr Arg 1065 1070 1075			3249

1070	1075	1080	
gct gag aag aac tat gcc gtc Ala Glu Lys Asn Tyr Ala Val 1085	agc tct ggg aag tgg Ser Ser Gly Lys Trp 1090	tac ttc gag Tyr Phe Glu 1095	3294
ttt gag atc tta acg gct gga Phe Glu Ile Leu Thr Ala Gly 1100	cct atg agg gtc ggc Pro Met Arg Val Gly 1105	tgg gct cac Trp Ala His 1110	3339
gct gat atg gca cca gga atg Ala Asp Met Ala Pro Gly Met 1115	atg ctc gga caa gac Met Leu Gly Gln Asp 1120	gag aac tct Glu Asn Ser 1125	3384
tgg gca ttt gat ggt tac aat Trp Ala Phe Asp Gly Tyr Asn 1130	gag gaa aaa gtg tac Glu Glu Lys Val Tyr 1135	agc ggt aac Ser Gly Asn 1140	3429
act gag tct ttc ggc aag caa Thr Glu Ser Phe Gly Lys Gln 1145	tgg gct gtt ggt gac Trp Ala Val Gly Asp 1150	gta gtg ggg Val Val Gly 1155	3474
gtg ttc cta gat ctc att gat Val Phe Leu Asp Leu Ile Asp 1160	aag acg ata agt ttc Lys Thr Ile Ser Phe 1165	tca ctc aat Ser Leu Asn 1170	3519
ggg gag ttg ttg atg gat gct Gly Glu Leu Leu Met Asp Ala 1175	ctt ggc gga gag act Leu Gly Gly Glu Thr 1180	acg ttt gct Thr Phe Ala 1185	3564
gat gtc cag ggt gac aac ttt Asp Val Gln Gly Asp Asn Phe 1190	gta cca gct tgc aca Val Pro Ala Cys Thr 1195	ctt ggt gtg Leu Gly Val 1200	3609
ggc caa aaa gcc agg tta aca Gly Gln Lys Ala Arg Leu Thr 1205	tat ggc caa gat gtg Tyr Gly Gln Asp Val 1210	aat act ctg Asn Thr Leu 1215	3654
aaa tac ttc aca aca tgt ggt Lys Tyr Phe Thr Thr Cys Gly 1220	ctt cag gag gga tat Leu Gln Glu Gly Tyr 1225	gaa cca ttt Glu Pro Phe 1230	3699
tgc gtc aat atg aag aga gac Cys Val Asn Met Lys Arg Asp 1235	gtg act cac tgg tac Val Thr His Trp Tyr 1240	acc aag gac Thr Lys Asp 1245	3744
cag ccg atc ttc gag aat act Gln Pro Ile Phe Glu Asn Thr 1250	gat gag atg atc gac Asp Glu Met Ile Asp 1255	acc agg att Thr Arg Ile 1260	3789
gat gtg acc agg ata cca gct Asp Val Thr Arg Ile Pro Ala 1265	ggg tca gat aca cct Gly Ser Asp Thr Pro 1270	cca tgc ctc Pro Cys Leu 1275	3834
aag att tcc cac aac acg ttc Lys Ile Ser His Asn Thr Phe 1280	gag acg atg gag aaa Glu Thr Met Glu Lys 1285	gct aac tgg Ala Asn Trp 1290	3879
gag ttc tta cgt ctc tca ctg Glu Phe Leu Arg Leu Ser Leu 1295	cct gtt atc tgc cat Pro Val Ile Cys His 1300	aac gag ttc Asn Glu Phe 1305	3924

1295	1300	1305	
att gac gag gca gaa aaa gcc Ile Asp Glu Ala Glu Lys Ala	aga cgt tgg gta gaa Arg Arg Trp Val Glu	atc aag gac Ile Lys Asp	3969
1310	1315	1320	
cgt caa cag atc cta atg aaa Arg Gln Gln Ile Leu Met Lys	gag gca gtt gaa gct Glu Ala Val Glu Ala	cag atg ccc Gln Met Pro	4014
1325	1330	1335	
gcc cat att gac cag atc atg Ala His Ile Asp Gln Ile Met	agg agc ggt ttc acc Arg Ser Gly Phe Thr	atg aac gat Met Asn Asp	4059
1340	1345	1350	
atc aaa ggt ttg cac tac gaa Ile Lys Gly Leu His Tyr Glu	gac aat cag gaa gag Asp Asn Gln Glu Glu	ttg ccc agc Leu Pro Ser	4104
1355	1360	1365	
tcc aag atg aag cgc ctg cct Ser Lys Met Lys Arg Leu Pro	tca agg cca cca cgt Ser Arg Pro Pro Arg	aag gga tcc Lys Gly Ser	4149
1370	1375	1380	
atg aca aga ggt gtt act ata Met Thr Arg Gly Val Thr Ile	caa aat tac aat aat Gln Asn Tyr Asn Asn	ttg caa cca Leu Gln Pro	4194
1385	1390	1395	
ggc caa gtc aac ggc atg cac Gly Gln Val Asn Gly Met His	cgg tcg acc agt gaa Arg Ser Thr Ser Glu	gct gaa atg Ala Glu Met	4239
1400	1405	1410	
gcc aag tat gac ttg gga gcg Ala Lys Tyr Asp Leu Gly Ala	caa ggt ttg acg cct Gln Gly Leu Thr Pro	gat gat aag Asp Asp Lys	4284
1415	1420	1425	
aag gac aag agg gga cga tcg Lys Asp Lys Arg Gly Arg Ser	cct ttc aag ttc ttc Pro Phe Lys Phe Phe	aga agc aag Arg Ser Lys	4329
1430	1435	1440	
cgc ggc gaa agc agt gat cgt Arg Gly Glu Ser Ser Asp Arg	gct aaa tcc cgt aaa Ala Lys Ser Arg Lys	tcc aaa aca Ser Lys Thr	4374
1445	1450	1455	
cca gac ccc ttc agt gat acc Pro Asp Pro Phe Ser Asp Thr	gaa gta tca cca gaa Glu Val Ser Pro Glu	cgt ggt gct Arg Gly Ala	4419
1460	1465	1470	
cga agg cct aac cct cag atc Arg Arg Pro Asn Pro Gln Ile	aaa gtg tca cag gcc Lys Val Ser Gln Ala	aat caa aga Asn Gln Arg	4464
1475	1480	1485	
tat aac ggc atg aac gcg cgt Tyr Asn Gly Met Asn Ala Arg	cct agc agg acc aac Pro Ser Arg Thr Asn	ttg tat ggg Leu Tyr Gly	4509
1490	1495	1500	
agc caa gtt ggt ttg aac atg Ser Gln Val Gly Leu Asn Met	gcg acg ccc acg caa Ala Thr Pro Thr Gln	gac agg aag Asp Arg Lys	4554
1505	1510	1515	
cag atg acg acc agc act ctc Gln Met Thr Thr Ser Thr Leu	gcg cag tcg gct acg Ala Gln Ser Ala Thr	gaa act gtc Glu Thr Val	4599

1520	1525	1530	
ggc aat gag atc ttc gat gca gag tgt ttg aag ctc atc aat gag Gly Asn Glu Ile Phe Asp Ala Glu Cys Leu Lys Leu Ile Asn Glu 1535 1540 1545			4644
tac ttt tat gga gtc agg atc tac cca ggt caa gac cca acc cac Tyr Phe Tyr Gly Val Arg Ile Tyr Pro Gly Gln Asp Pro Thr His 1550 1555 1560			4689
gtg tac atc ggc tgg gtg acc acc cag tac cac ttg cac tct aag Val Tyr Ile Gly Trp Val Thr Thr Gln Tyr His Leu His Ser Lys 1565 1570 1575			4734
gac ttc aac cag agc aag gtc acc aag tcc tct gtc atc atc act Asp Phe Asn Gln Ser Lys Val Thr Lys Ser Ser Val Ile Ile Thr 1580 1585 1590			4779
gat gat tac gat agg gtt gtt gag aac gta aac cgg caa tcg tgc Asp Asp Tyr Asp Arg Val Val Glu Asn Val Asn Arg Gln Ser Cys 1595 1600 1605			4824
tac atg gtg cga gct gat gag ctg tac aac gag gtg atg gcg gaa Tyr Met Val Arg Ala Asp Glu Leu Tyr Asn Glu Val Met Ala Glu 1610 1615 1620			4869
gcc acg gcc aag ggt gcc tcg caa ggc atg ttc atc ggc tgc tcc Ala Thr Ala Lys Gly Ala Ser Gln Gly Met Phe Ile Gly Cys Ser 1625 1630 1635			4914
gtc gac acc tcc acc ggc agc gtg tcc ttc acc tgt gag ggg aag Val Asp Thr Ser Thr Gly Ser Val Ser Phe Thr Cys Glu Gly Lys 1640 1645 1650			4959
gac acc agc ttc aag ttt aag atg gaa cca gaa aca aaa ttg ttc Asp Thr Ser Phe Lys Phe Lys Met Glu Pro Glu Thr Lys Leu Phe 1655 1660 1665			5004
ccc gcg atc ttc gta gaa gcg acc tcc aag gag atc ctg cag ata Pro Ala Ile Phe Val Glu Ala Thr Ser Lys Glu Ile Leu Gln Ile 1670 1675 1680			5049
gag ctg ggc aga tca gcc acc agt ctg cca cta tca gcc gct gta Glu Leu Gly Arg Ser Ala Thr Ser Leu Pro Leu Ser Ala Ala Val 1685 1690 1695			5094
cta cct acg agt gat aag cat gtc ata cca cag ttc ccg ccg agg Leu Pro Thr Ser Asp Lys His Val Ile Pro Gln Phe Pro Pro Arg 1700 1705 1710			5139
ttg aag gtg cag tgc ttg aaa cca cat cag tgg gct agg gta ccg Leu Lys Val Gln Cys Leu Lys Pro His Gln Trp Ala Arg Val Pro 1715 1720 1725			5184
aac caa tca cta caa gtc cac gct ctg aag ttg tcc gac atc cgc Asn Gln Ser Leu Gln Val His Ala Leu Lys Leu Ser Asp Ile Arg 1730 1735 1740			5229
ggt tgg tcg atg ctg tgt gaa gac gcc gtt tct atg cta gct tta Gly Trp Ser Met Leu Cys Glu Asp Ala Val Ser Met Leu Ala Leu 1745 1750 1755			5274



1745	1750	1755	
cat ata ccg gag gaa gat cgc tgc ata gac att ttg gag ccg ata His Ile Pro Glu Glu Asp Arg Cys Ile Asp Ile Leu Glu Pro Ile 1760 1765 1770			5319
gaa atg gac aaa ctt cta agt ttc cat tct cac acc ctc acg tta Glu Met Asp Lys Leu Leu Ser Phe His Ser His Thr Leu Thr Leu 1775 1780 1785			5364
tac gct gct tta tgt tac cag agt aac tac agg gcg gcc cac gct Tyr Ala Ala Leu Cys Tyr Gln Ser Asn Tyr Arg Ala Ala His Ala 1790 1795 1800			5409
ctg tgc acg cac gtg gac cag aag cag ctg ctg tac gcg atc cag Leu Cys Thr His Val Asp Gln Lys Gln Leu Leu Tyr Ala Ile Gln 1805 1810 1815			5454
tcg cag tac atg tcg ggc ccg ctg cgc cag ggc ttc tac gat ctg Ser Gln Tyr Met Ser Gly Pro Leu Arg Gln Gly Phe Tyr Asp Leu 1820 1825 1830			5499
ctc ata gca ctg cat ctc gag tgc cat gcc acc acc atg gag gcg Leu Ile Ala Leu His Leu Glu Ser His Ala Thr Thr Met Glu Ala 1835 1840 1845			5544
tgt aag aac gag ttc gtg atc ccg ctg ggc ccg gag ctg aag gcg Cys Lys Asn Glu Phe Val Ile Pro Leu Gly Pro Glu Leu Lys Ala 1850 1855 1860			5589
ctg tac gag gag ccc gac atg gga cac tcg ctg cgc tcg ctg cag Leu Tyr Glu Glu Pro Asp Met Gly His Ser Leu Arg Ser Leu Gln 1865 1870 1875			5634
acc gag agc gtg cgc ccg cag atg aag atg acc gat atc gct gaa Thr Glu Ser Val Arg Pro Gln Met Lys Met Thr Asp Ile Ala Glu 1880 1885 1890			5679
agt ata acc gag ata agc aac cta tac tcg ccg tac ttc ccg ctg Ser Ile Thr Glu Ile Ser Asn Leu Tyr Ser Pro Tyr Phe Pro Leu 1895 1900 1905			5724
gag gtg gcg cgc gag ttc gtg atg cag gcg ctg gct gaa gcc gtg Glu Val Ala Arg Glu Phe Val Met Gln Ala Leu Ala Glu Ala Val 1910 1915 1920			5769
gag acc aac cag gtg cac aac cgg gat cct gtc ggg ggg agc aat Glu Thr Asn Gln Val His Asn Arg Asp Pro Val Gly Gly Ser Asn 1925 1930 1935			5814
gag aac ctg ttc ctg cct cta ata aag ttg gtg gac cgt ctc ctg Glu Asn Leu Phe Leu Pro Leu Ile Lys Leu Val Asp Arg Leu Leu 1940 1945 1950			5859
ctg gtc ggc atg atg cgc gac gaa gat gtg gag aag cta ctc atc Leu Val Gly Met Met Arg Asp Glu Asp Val Glu Lys Leu Leu Ile 1955 1960 1965			5904
atg acc aac cct gag aca tgg gac ccc tcg ttt gac aaa gag ggt Met Thr Asn Pro Glu Thr Trp Asp Pro Ser Phe Asp Lys Glu Gly 1970 1975 1980			5949

1970					1975					1980					
aaa gac	gag cac	cgc aaa	ggt cta	ctc cac	atg aaa	atg gcg	gaa								5994
Lys Asp	Glu His	Arg Lys	Gly Leu	Leu His	Met Lys	Met Ala	Glu								
1985			1990			1995									
ggc gct	aag ctg	cag atg	tgt tac	tta ctg	caa cat	ctc aac	gac								6039
Gly Ala	Lys Leu	Gln Met	Cys Tyr	Leu Leu	Gln His	Leu Asn	Asp								
2000			2005			2010									
ata cag	ctg cgg	cac agg	gtc gaa	gct atc	att gcg	ttt gcg	cat								6084
Ile Gln	Leu Arg	His Arg	Val Glu	Ala Ile	Ile Ala	Phe Ala	His								
2015			2020			2025									
gac ttc	gtc ggt	gat cta	cag act	gat cag	ctc aga	cgt tac	acg								6129
Asp Phe	Val Gly	Asp Leu	Gln Thr	Asp Gln	Leu Arg	Arg Tyr	Thr								
2030			2035			2040									
gaa atc	aag cag	tcg gac	ttg ccg	agc gcg	gtt gcc	gct aaa	aag								6174
Glu Ile	Lys Gln	Ser Asp	Leu Pro	Ser Ala	Val Ala	Ala Lys	Lys								
2045			2050			2055									
acg agg	gag ttc	cgt tgt	ccg cct	aga gaa	cag atg	aac gct	ata								6219
Thr Arg	Glu Phe	Arg Cys	Pro Pro	Arg Glu	Gln Met	Asn Ala	Ile								
2060			2065			2070									
ctg agt	ttc aag	cac tta	gag gag	gaa gac	aag gag	aac tgt	ccg								6264
Leu Ser	Phe Lys	His Leu	Glu Glu	Glu Asp	Lys Glu	Asn Cys	Pro								
2075			2080			2085									
tgc ggc	gag gag	ctg atc	gcg cgc	atg aac	gag ttc	cac gac	acc								6309
Cys Gly	Glu Glu	Leu Ile	Ala Arg	Met Asn	Glu Phe	His Asp	Thr								
2090			2095			2100									
ctc atg	gcg cac	gtc tcg	ctg cac	gcg ctg	cag gag	cct gat	gct								6354
Leu Met	Ala His	Val Ser	Leu His	Ala Leu	Gln Glu	Pro Asp	Ala								
2105			2110			2115									
gcg gaa	aat caa	gaa cca	gaa gca	aaa ccg	ggc gca	ttc ggc	aag								6399
Ala Glu	Asn Gln	Glu Pro	Glu Ala	Lys Pro	Gly Ala	Phe Gly	Lys								
2120			2125			2130									
tta tac	aac att	atc aat	acg gta	aag gaa	ttg gaa	gaa gaa	gct								6444
Leu Tyr	Asn Ile	Ile Asn	Thr Val	Lys Glu	Leu Glu	Glu Glu	Ala								
2135			2140			2145									
aag gca	att gaa	gag cct	ccg aag	aag acg	cct gag	gag aag	ttc								6489
Lys Ala	Ile Glu	Glu Pro	Pro Lys	Lys Thr	Pro Glu	Glu Lys	Phe								
2150			2155			2160									
cgt aag	gtc ctc	atc cag	acc atc	gtg aac	tgg gct	gag gag	tcg								6534
Arg Lys	Val Leu	Ile Gln	Thr Ile	Val Asn	Trp Ala	Glu Glu	Ser								
2165			2170			2175									
cag ata	gaa aca	ccc aaa	ctc gtc	aga gaa	atg ttc	agt ctt	cta								6579
Gln Ile	Glu Thr	Pro Lys	Leu Val	Arg Glu	Met Phe	Ser Leu	Leu								
2180			2185			2190									
gtc cgc	cag tac	gac gca	gta ggc	gaa cta	atc cgc	gct cta	gag								6624
Val Arg	Gln Tyr	Asp Ala	Val Gly	Glu Leu	Ile Arg	Ala Leu	Glu								

2195	2200	2205	
aag aca tac gtc atc aac gcg Lys Thr Tyr Val Ile Asn Ala 2210	aag acc aag tta gat Lys Thr Lys Leu Asp 2215	gtc gcg gag Val Ala Glu 2220	6669
atg tgg gtg ggg ctc agc cag Met Trp Val Gly Leu Ser Gln 2225	atc cga gcc ctc ctg Ile Arg Ala Leu Leu 2230	cca gtg cag Pro Val Gln 2235	6714
atg agc cag gag gaa gag gaa Met Ser Gln Glu Glu Glu Glu 2240	ctc atg agg aag agg Leu Met Arg Lys Arg 2245	ctc tgg aaa Leu Trp Lys 2250	6759
ctt gtg aac aac cac aca ttc Leu Val Asn Asn His Thr Phe 2255	ttc cag cat cca gac Phe Gln His Pro Asp 2260	ttg atc agg Leu Ile Arg 2265	6804
gtg ctc cgc gtg cac gag aac Val Leu Arg Val His Glu Asn 2270	gtg atg gcg gtg atg Val Met Ala Val Met 2275	atg aac acg Met Asn Thr 2280	6849
ctc ggc cgc cgc gcg cag gcg Leu Gly Arg Arg Ala Gln Ala 2285	cag tcc gac gca cag Gln Ser Asp Ala Gln 2290	ccc tcc tcg Pro Ser Ser 2295	6894
cag cct gtc gca gag gac agc Gln Pro Val Ala Glu Asp Ser 2300	aag gag aag gac aca Lys Glu Lys Asp Thr 2305	tca cac gag Ser His Glu 2310	6939
atg gtg gta gct tgc tgc cgt Met Val Val Ala Cys Cys Arg 2315	ttt ctc tgc tac ttc Phe Leu Cys Tyr Phe 2320	tgc cgc acc Cys Arg Thr 2325	6984
ggg aga cag aac cag aag gct Gly Arg Gln Asn Gln Lys Ala 2330	atg ttc gac cac ttc Met Phe Asp His Phe 2335	gac ttc ctc Asp Phe Leu 2340	7029
ctg gag aac tcc aac atc ctg Leu Glu Asn Ser Asn Ile Leu 2345	ctg tcc aga ccc tcg Leu Ser Arg Pro Ser 2350	ctg aga gga Leu Arg Gly 2355	7074
tcc acg cct cta gac gtg gct Ser Thr Pro Leu Asp Val Ala 2360	tac tcc agt ctt atg Tyr Ser Ser Leu Met 2365	gag aac act Glu Asn Thr 2370	7119
gaa ctg gcg ctg gct ttg aga Glu Leu Ala Leu Ala Leu Arg 2375	gag cac tac ctg gag Glu His Tyr Leu Glu 2380	aag ata gca Lys Ile Ala 2385	7164
gta tac ctg tcc cgt tgt ggt Val Tyr Leu Ser Arg Cys Gly 2390	ctg cag agc aac tcg Leu Gln Ser Asn Ser 2395	gag ctg gtg Glu Leu Val 2400	7209
gag aag ggg tac cct gac ctc Glu Lys Gly Tyr Pro Asp Leu 2405	ggc tgg gat ccg gtc Gly Trp Asp Pro Val 2410	gag ggg gag Glu Gly Glu 2415	7254
cgg tat ctt gac ttc ctg agg Arg Tyr Leu Asp Phe Leu Arg 2415	ttc tgt gtt tgg gta Phe Cys Val Trp Val 2420	aac ggc gaa Asn Gly Glu 2425	7299

2420	2425	2430	
agc gta gaa gaa aac gcg aac cta gtg atc cgt ctc ctg atc cgt			7344
Ser Val Glu Glu Asn Ala Asn Leu Val Ile Arg Leu Leu Ile Arg			
2435	2440	2445	
cgt ccg gag tgc ctc ggg ccg gcg ctg cgc ggc gag ggc gag ggc			7389
Arg Pro Glu Cys Leu Gly Pro Ala Leu Arg Gly Glu Gly Glu Gly			
2450	2455	2460	
ctg ctg aag gcc atc gtc gac gcc aac aag atg agc gag agg atc			7434
Leu Leu Lys Ala Ile Val Asp Ala Asn Lys Met Ser Glu Arg Ile			
2465	2470	2475	
gcc gac agg agg aag ctc agg gaa atg gag cag gag gga gat gtt			7479
Ala Asp Arg Arg Lys Leu Arg Glu Met Glu Gln Glu Gly Asp Val			
2480	2485	2490	
aac ttc agc cac ccc ctc ccg gag tca gat gag gat gag gac tac			7524
Asn Phe Ser His Pro Leu Pro Glu Ser Asp Glu Asp Glu Asp Tyr			
2495	2500	2505	
ata gac acg ggc gcc gcc atc ttg aac ttc tac tgt acc ttg gta			7569
Ile Asp Thr Gly Ala Ala Ile Leu Asn Phe Tyr Cys Thr Leu Val			
2510	2515	2520	
gat ttg ctc gga aga tgt gct cct gat gcc ggt gtt att gct ctc			7614
Asp Leu Leu Gly Arg Cys Ala Pro Asp Ala Gly Val Ile Ala Leu			
2525	2530	2535	
ggc aag aac gag tct ctc cgt gcc cgc gct atc ctg cgg tcg ctg			7659
Gly Lys Asn Glu Ser Leu Arg Ala Arg Ala Ile Leu Arg Ser Leu			
2540	2545	2550	
gtg ccg ctg gag gac ctg cag gga gtg ctg agc ctg cgc ttc acg			7704
Val Pro Leu Glu Asp Leu Gln Gly Val Leu Ser Leu Arg Phe Thr			
2555	2560	2565	
ctc aac aac cct gct gct gga gag gaa cga ccc aag tct gat atg			7749
Leu Asn Asn Pro Ala Ala Gly Glu Glu Arg Pro Lys Ser Asp Met			
2570	2575	2580	
cca tcg ggt ctg atc ccg gga cac aag cag agc gtg gga ctg ttc			7794
Pro Ser Gly Leu Ile Pro Gly His Lys Gln Ser Val Gly Leu Phe			
2585	2590	2595	
cta gag aga gtg tac ggc atc gaa act cag gag ttg ttc tac aaa			7839
Leu Glu Arg Val Tyr Gly Ile Glu Thr Gln Glu Leu Phe Tyr Lys			
2600	2605	2610	
ctg ctg gag gaa gcc ttc ctg cca gac ctc agg gct gcc act atg			7884
Leu Leu Glu Glu Ala Phe Leu Pro Asp Leu Arg Ala Ala Thr Met			
2615	2620	2625	
ctg gac agg aac gac ggc tgc gag tca gac atg gcg ctg tcg atg			7929
Leu Asp Arg Asn Asp Gly Cys Glu Ser Asp Met Ala Leu Ser Met			
2630	2635	2640	
aac cgc tac atc ggc aac tcg atc ctg ccg ctg ctg atc aag cac			7974
Asn Arg Tyr Ile Gly Asn Ser Ile Leu Pro Leu Leu Ile Lys His			

2645	2650	2655	
gcg tac ttc tac aac gaa gct Ala Tyr Phe Tyr Asn Glu Ala 2660	gag aac tac gcc agt Glu Asn Tyr Ala Ser 2665	tta ttg gat Leu Leu Asp 2670	8019
gcc acg cta cat act gtt tat Ala Thr Leu His Thr Val Tyr 2675	agg tta tcg aag aat Arg Leu Ser Lys Asn 2680	cgc atg tta Arg Met Leu 2685	8064
acc aag ggc cag cgt gaa gcg Thr Lys Gly Gln Arg Glu Ala 2690	gtg tca gac ttc ctc Val Ser Asp Phe Leu 2695	gtg gcg ctt Val Ala Leu 2700	8109
act tca gcg atg cag cct tcc Thr Ser Ala Met Gln Pro Ser 2705	atg ttg ctc aag ctg Met Leu Leu Lys Leu 2710	ctc agg aaa Leu Arg Lys 2715	8154
ttg acg gtc gac gtg tct aaa Leu Thr Val Asp Val Ser Lys 2720	ctg tcc gag tat acc Leu Ser Glu Tyr Thr 2725	act gtc gct Thr Val Ala 2730	8199
ctt agg ctg ctg acg ctg cac Leu Arg Leu Leu Thr Leu His 2735	tac gag cgc tgc gcg Tyr Glu Arg Cys Ala 2740	aag tac tac Lys Tyr Tyr 2745	8244
ggc agc acg ggc gcg ggg cag Gly Ser Thr Gly Ala Gly Gln 2750	ggc gcg ttc ggc gcg Gly Ala Phe Gly Ala 2755	tcg tcg gac Ser Ser Asp 2760	8289
gag gag aag cgc ctc acc atg Glu Glu Lys Arg Leu Thr Met 2765	atg ctc ttc tcc aac Met Leu Phe Ser Asn 2770	atc ttc gac Ile Phe Asp 2775	8334
tcg ctc agc aag atg gac tac Ser Leu Ser Lys Met Asp Tyr 2780	gag ccc gag ctc ttc Glu Pro Glu Leu Phe 2785	ggg aag gcg Gly Lys Ala 2790	8379
ctg ccc tgt ctt att gct ata Leu Pro Cys Leu Ile Ala Ile 2795	gga tgc gct ctg cct Gly Cys Ala Leu Pro 2800	cct gac tac Pro Asp Tyr 2805	8424
tct ctc tca aag aac tat gat Ser Leu Ser Lys Asn Tyr Asp 2810	gac gag ttt tac ggc Asp Glu Phe Tyr Gly 2815	aag gag caa Lys Glu Gln 2820	8469
gct gca ggt gac tta gac aat Ala Ala Gly Asp Leu Asp Asn 2825	ccc caa tac gac cct Pro Gln Tyr Asp Pro 2830	cag ccc ata Gln Pro Ile 2835	8514
aac acg tcc tca gta gca tta Asn Thr Ser Ser Val Ala Leu 2840	aac aat gat ctc aac Asn Asn Asp Leu Asn 2845	acg atc gta Thr Ile Val 2850	8559
cag aag ttc tcg gaa cat tac Gln Lys Phe Ser Glu His Tyr 2855	cac gat gcg tgg gct His Asp Ala Trp Ala 2860	agt agg aag Ser Arg Lys 2865	8604
att gag aac ggc tgg gtg tat Ile Glu Asn Gly Trp Val Tyr 2870	gga gag ggc tgg tct Gly Glu Gly Trp Ser 2875	gat agc cag Asp Ser Gln 2880	8649

2870					2875					2880					
aag	acg	cat	cct	agg	ctg	aag	cct	tat	aat	atg	ctt	aat	gat	tat	8694
Lys	Thr	His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Asn	Asp	Tyr	
2885					2890					2895					
gaa	aaa	gag	cgt	tac	aag	gag	cca	gta	cgt	gaa	tct	ctg	aag	gca	8739
Glu	Lys	Glu	Arg	Tyr	Lys	Glu	Pro	Val	Arg	Glu	Ser	Leu	Lys	Ala	
2900					2905					2910					
ctt	cta	gcc	atc	ggc	tgg	tct	gtg	gaa	cat	tca	gaa	gta	gac	ata	8784
Leu	Leu	Ala	Ile	Gly	Trp	Ser	Val	Glu	His	Ser	Glu	Val	Asp	Ile	
2915					2920					2925					
ccg	agt	aac	aac	cga	agc	tcc	atg	agg	agg	cag	tcc	aag	tcg	gga	8829
Pro	Ser	Asn	Asn	Arg	Ser	Ser	Met	Arg	Arg	Gln	Ser	Lys	Ser	Gly	
2930					2935					2940					
ggc	cgc	cct	ccc	gaa	att	gtg	aca	gac	tcg	gcg	act	cca	ttc	gac	8874
Gly	Arg	Pro	Pro	Glu	Ile	Val	Thr	Asp	Ser	Ala	Thr	Pro	Phe	Asp	
2945					2950					2955					
tac	aac	cct	cac	cca	gtc	gac	atg	acc	aac	ttg	acg	cta	tcg	agg	8919
Tyr	Asn	Pro	His	Pro	Val	Asp	Met	Thr	Asn	Leu	Thr	Leu	Ser	Arg	
2960					2965					2970					
gag	atg	cag	aac	atg	gag	gag	agg	ctc	gct	gac	aac	gca	cat	gac	8964
Glu	Met	Gln	Asn	Met	Ala	Glu	Arg	Leu	Ala	Asp	Asn	Ala	His	Asp	
2975					2980					2985					
atc	tgg	gag	aag	aag	aag	aag	gaa	gaa	ctt	gtt	act	aat	gga	ggc	9009
Ile	Trp	Ala	Lys	Lys	Lys	Lys	Glu	Glu	Leu	Val	Thr	Asn	Gly	Gly	
2990					2995					3000					
ggc	atc	cac	ccc	caa	cta	gta	ccc	tac	gac	ctc	cta	aca	gac	aaa	9054
Gly	Ile	His	Pro	Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	
3005					3010					3015					
gaa	aag	aag	aaa	gat	cga	gaa	cgt	tct	cag	gag	ttc	ctc	aaa	tac	9099
Glu	Lys	Lys	Lys	Asp	Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	
3020					3025					3030					
ctg	cag	tac	caa	ggg	tac	aag	ctc	cac	cgg	ccc	agc	aag	gag	cca	9144
Leu	Gln	Tyr	Gln	Gly	Tyr	Lys	Leu	His	Arg	Pro	Ser	Lys	Ala	Pro	
3035					3040					3045					
caa	agt	gat	acg	gaa	caa	acc	act	acg	ggg	gta	gca	ata	gag	ttg	9189
Gln	Ser	Asp	Thr	Glu	Gln	Thr	Thr	Thr	Gly	Val	Ala	Ile	Glu	Leu	
3050					3055					3060					
aga	ttt	gag	tac	tcg	ctc	ctt	gag	aaa	ttg	atc	cag	tac	atc	gat	9234
Arg	Phe	Ala	Tyr	Ser	Leu	Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Ile	Asp	
3065					3070					3075					
agg	gcc	acc	att	aat	atg	aag	ctt	ttg	aaa	cct	tcg	act	aca	ttc	9279
Arg	Ala	Thr	Ile	Asn	Met	Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe	
3080					3085					3090					
agt	agg	aga	agt	agt	ttt	aag	act	agt	acc	agg	gat	att	aag	ttc	9324
Ser	Arg	Arg	Ser	Ser	Phe	Lys	Thr	Ser	Thr	Arg	Asp	Ile	Lys	Phe	

3095	3100	3105	
ttt tct aag gcg gtg ctg cct Phe Ser Lys Ala Val Leu Pro 3110	cta atg gag aag tat Leu Met Glu Lys Tyr 3115	ttc tca acg Phe Ser Thr 3120	9369
cat cgt aac tac ttc ata gca His Arg Asn Tyr Phe Ile Ala 3125	gta gct act gcg acc Val Ala Thr Ala Thr 3130	aat aat gtt Asn Asn Val 3135	9414
ggc gca gcc agc ctg aag gag Gly Ala Ala Ser Leu Lys Glu 3140	aaa gag atg gta gcc Lys Glu Met Val Ala 3145	gcg ctg ttc Ala Leu Phe 3150	9459
tgt aag ctt gct agc ttg ctt Cys Lys Leu Ala Ser Leu Leu 3155	aga tct aga ctc Arg Ser Arg Leu 3160	gca gct ttc ggt Ala Ala Phe Gly 3165	9504
cct gac gtc cgc atc aca gtc Pro Asp Val Arg Ile Thr Val 3170	cgc tgt ctc caa gtg Arg Cys Leu Gln Val 3175	ttg gtg aag Leu Val Lys 3180	9549
ggc atc gac gcc aag tcc tta Gly Ile Asp Ala Lys Ser Leu 3185	gtg aag aac tgc Val Lys Asn Cys 3190	ccc gag ttc atc Pro Glu Phe Ile 3195	9594
agg acc tcc atg ttg acc ttc Arg Thr Ser Met Leu Thr Phe 3200	ttc aac aat gtc Phe Asn Asn Val 3205	gct gat gat gta Ala Asp Asp Val 3210	9639
ggg cat acc atc atg aat tta Gly His Thr Ile Met Asn Leu 3215	cag gat ggt aaa tac Gln Asp Gly Lys Tyr 3220	gcg cac ctt Ala His Leu 3225	9684
cga ggt aca cat ttg aag acg Arg Gly Thr His Leu Lys Thr 3230	tcc acg tcc ctg Ser Thr Ser Leu 3235	ggc tat atc aat Gly Tyr Ile Asn 3240	9729
gga gta ctg ctc ccc ata ctg Gly Val Leu Leu Pro Ile Leu 3245	acg gcc aag ttc gac Thr Ala Lys Phe Asp 3250	cat ctg gct His Leu Ala 3255	9774
aac tgc gag tac ggt gct gat Asn Cys Glu Tyr Gly Ala Asp 3260	ctg ttg ttg gac gag Leu Leu Leu Asp Glu 3265	ata caa gtg Ile Gln Val 3270	9819
gcg tca tac aag atg ttg ggc Ala Ser Tyr Lys Met Leu Gly 3275	tcc ctg tac gcg ctc Ser Leu Tyr Ala Leu 3280	ggc acg gac Gly Thr Asp 3285	9864
gct tcg ctc aca cac gac aga Ala Ser Leu Thr His Asp Arg 3290	aag tac ctc aag act Lys Tyr Leu Lys Thr 3295	gag att gag Glu Ile Glu 3300	9909
aga cat aaa cct gct ttg ggt Arg His Lys Pro Ala Leu Gly 3305	tcg tgt cta ggt gcg Ser Cys Leu Gly Ala 3310	ttc agt tcg Phe Ser Ser 3315	9954
aca ttc cca gtg gcg ttc ttg Thr Phe Pro Val Ala Phe Leu 3320	gaa cct cac ctg aac Glu Pro His Leu Asn 3325	aaa cac aac Lys His Asn 3330	9999

3320	3325	3330	
cag ttc tcc ttg ctg aac agg Gln Phe Ser Leu Leu Asn Arg 3335	atc gct gac cat tct Ile Ala Asp His Ser 3340	ttg gaa gcc Leu Glu Ala 3345	10044
caa gac ata atg cag aaa atg Gln Asp Ile Met Gln Lys Met 3350	gaa caa tgc atg ccg Glu Gln Cys Met Pro 3355	acg cta gag Thr Leu Glu 3360	10089
acg atc tta ggc gag gtg gac Thr Ile Leu Gly Glu Val Asp 3365	caa ttc gtg gag tca Gln Phe Val Glu Ser 3370	gac aag acg Asp Lys Thr 3375	10134
tac aac gag gcg ccg cat atc Tyr Asn Glu Ala Pro His Ile 3380	atc gat gtg gtg ctg Ile Asp Val Val Leu 3385	cct tta ctc Pro Leu Leu 3390	10179
tgt tct tat ttg ccg ttc tgg Cys Ser Tyr Leu Pro Phe Trp 3395	tgg gca cag ggg cct Trp Ala Gln Gly Pro 3400	gat aat gtt Asp Asn Val 3405	10224
act cct act ggc gga aac cac Thr Pro Thr Gly Gly Asn His 3410	gta aca atg gta aca Val Thr Met Val Thr 3415	gcg gaa cac Ala Glu His 3420	10269
atg aac cag ctc ctc aag aat Met Asn Gln Leu Leu Lys Asn 3425	gtt ctg aag ctc atc Val Leu Lys Leu Ile 3430	aaa aag aac Lys Lys Asn 3435	10314
atc ggc aat gag aac gcg ccg Ile Gly Asn Glu Asn Ala Pro 3440	tgg atg acc cgc atc Trp Met Thr Arg Ile 3445	gcc acc tac Ala Thr Tyr 3450	10359
acg cag cag atc atc atc aac Thr Gln Gln Ile Ile Ile Asn 3455	agc tcc gag gaa ctg Ser Ser Glu Glu Leu 3460	ctg agg gat Leu Arg Asp 3465	10404
tcc ttc ctg ccg ctc gct gaa Ser Phe Leu Pro Leu Ala Glu 3470	cgt gtt cgc aaa cgc Arg Val Arg Lys Arg 3475	acg gac aat Thr Asp Asn 3480	10449
atg ttc cat aag gag gag agc Met Phe His Lys Glu Glu Ser 3485	ttg agg ggg ttt att Leu Arg Gly Phe Ile 3490	aag tcg tca Lys Ser Ser 3495	10494
aca gac gac aca tcc cag gta Thr Asp Asp Thr Ser Gln Val 3500	gag tct cag ata caa Glu Ser Gln Ile Gln 3505	gaa gac tgg Glu Asp Trp 3510	10539
cag ctg ctg gtc aga gac atc Gln Leu Leu Val Arg Asp Ile 3515	tac tcc ttc tac ccg Tyr Ser Phe Tyr Pro 3520	ctg ctc atc Leu Leu Ile 3525	10584
aag tac gtc gac ctg cag agg Lys Tyr Val Asp Leu Gln Arg 3530	aac cac tgg ctc agg Asn His Trp Leu Arg 3535	aac aat gtt Asn Asn Val 3540	10629
cca gag gcg gaa gag ctg tac Pro Glu Ala Glu Glu Leu Tyr	aac cac gtg gct gaa Asn His Val Ala Glu	atc ttc aac Ile Phe Asn	10674



3545						3550						3555						
atc	tgg	tcg	aag	agc	cag	tac	ttc	ttg	aag	gag	gaa	cag	aac	ttc	10719			
Ile	Trp	Ser	Lys	Ser	Gln	Tyr	Phe	Leu	Lys	Glu	Glu	Gln	Asn	Phe				
3560						3565						3570						
atc	tct	gcc	aac	gaa	att	gat	aac	atg	gtg	ctg	att	atg	cca	aca	10764			
Ile	Ser	Ala	Asn	Glu	Ile	Asp	Asn	Met	Val	Leu	Ile	Met	Pro	Thr				
3575						3580						3585						
gca	aca	aga	aga	gtg	aca	gca	gta	aca	gat	ggt	act	cct	caa	ggt	10809			
Ala	Thr	Arg	Arg	Val	Thr	Ala	Val	Thr	Asp	Gly	Thr	Pro	Gln	Gly				
3590						3595						3600						
ggt	gga	aag	aaa	aag	aag	aag	cac	cgt	gat	aag	aaa	cgc	gac	aaa	10854			
Gly	Gly	Lys	Lys	Lys	Lys	Lys	His	Arg	Asp	Lys	Lys	Arg	Asp	Lys				
3605						3610						3615						
gac	aag	gaa	gtc	caa	gcg	tcc	cta	atg	gta	gct	tgt	ctg	aag	agg	10899			
Asp	Lys	Glu	Val	Gln	Ala	Ser	Leu	Met	Val	Ala	Cys	Leu	Lys	Arg				
3620						3625						3630						
ttg	tta	cca	gtt	ggc	ctt	aac	cta	ttc	gct	ggc	aga	gaa	caa	gaa	10944			
Leu	Leu	Pro	Val	Gly	Leu	Asn	Leu	Phe	Ala	Gly	Arg	Glu	Gln	Glu				
3635						3640						3645						
ctg	gtg	cag	cat	tgt	aaa	gac	agg	ttc	ctg	aag	aaa	atg	tca	gaa	10989			
Leu	Val	Gln	His	Cys	Lys	Asp	Arg	Phe	Leu	Lys	Lys	Met	Ser	Glu				
3650						3655						3660						
caa	gat	gtg	gca	gaa	ttc	gcg	aag	acc	cag	ctg	aca	ctt	cca	gat	11034			
Gln	Asp	Val	Ala	Glu	Phe	Ala	Lys	Thr	Gln	Leu	Thr	Leu	Pro	Asp				
3665						3670						3675						
aaa	ata	gat	ccg	gca	gac	gaa	atg	tct	tgg	caa	cat	tac	ttg	tat	11079			
Lys	Ile	Asp	Pro	Ala	Asp	Glu	Met	Ser	Trp	Gln	His	Tyr	Leu	Tyr				
3680						3685						3690						
agc	aag	tta	ggt	tcg	aag	agt	aag	agc	aat	ata	act	gtg	gaa	act	11124			
Ser	Lys	Leu	Gly	Ser	Lys	Ser	Lys	Ser	Asn	Ile	Thr	Val	Glu	Thr				
3695						3700						3705						
gct	gaa	aat	aag	gcc	aag	att	att	gat	gat	acc	gtc	gag	aga	atc	11169			
Ala	Glu	Asn	Lys	Ala	Lys	Ile	Ile	Asp	Asp	Thr	Val	Glu	Arg	Ile				
3710						3715						3720						
gtc	gct	atg	agt	aaa	gtg	ctt	ttc	gga	ttg	cat	atg	atc	gac	cat	11214			
Val	Ala	Met	Ser	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile	Asp	His				
3725						3730						3735						
ccc	caa	caa	atg	agt	aag	aac	gtg	tac	cgg	tcg	gtg	gtg	tcg	ata	11259			
Pro	Gln	Gln	Met	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val	Ser	Ile				
3740						3745						3750						
caa	cgc	aag	cgc	gcc	gtc	atc	gcc	tgc	ttc	cga	caa	act	tca	cta	11304			
Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Thr	Ser	Leu				
3755						3760						3765						
cat	tct	ctg	ccg	aga	cat	cga	gcg	tgt	aac	atc	ttc	gct	cgc	acg	11349			
His	Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe	Ala	Arg	Thr				

3770				3775				3780							
tac	tac	gag	ctc	tgg	ttg	gaa	gag	gag	aac	att	gga	caa	gaa	gta	11394
Tyr	Tyr	Glu	Leu	Trp	Leu	Glu	Glu	Glu	Asn	Ile	Gly	Gln	Glu	Val	
3785				3790				3795							
atg	ata	gaa	gat	ctt	act	caa	tca	ttc	gaa	gac	gca	gag	ctg	aag	11439
Met	Ile	Glu	Asp	Leu	Thr	Gln	Ser	Phe	Glu	Asp	Ala	Glu	Leu	Lys	
3800				3805				3810							
aag	agt	gac	gtg	gtg	gag	gaa	ggg	gag	aag	cct	gac	ccc	ctc	acg	11484
Lys	Ser	Asp	Val	Val	Glu	Glu	Gly	Glu	Lys	Pro	Asp	Pro	Leu	Thr	
3815				3820				3825							
cag	ctg	gtc	acc	acc	ttc	tgt	cgc	ggg	gcc	atg	act	gag	agg	tcc	11529
Gln	Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu	Arg	Ser	
3830				3835				3840							
ggc	gct	ttg	cag	gag	gat	cct	cta	tac	atg	tct	tac	gca	cac	atc	11574
Gly	Ala	Leu	Gln	Glu	Asp	Pro	Leu	Tyr	Met	Ser	Tyr	Ala	His	Ile	
3845				3850				3855							
ata	gcg	aag	tcc	tgt	gga	gaa	gaa	gag	gaa	gaa	ggg	ggg	ggg	gag	11619
Ile	Ala	Lys	Ser	Cys	Gly	Glu	Glu	Glu	Glu	Glu	Gly	Gly	Gly	Glu	
3860				3865				3870							
gaa	gag	gaa	ggg	ggg	gga	gaa	gca	gag	gct	gaa	gac	gaa	ggc	aga	11664
Glu	Glu	Glu	Gly	Gly	Gly	Glu	Ala	Glu	Ala	Glu	Asp	Glu	Gly	Arg	
3875				3880				3885							
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His	Gln	Ala	Arg	Leu	Ala	Asp	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	
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Lys	Thr	Leu	Gln	Leu	Gly	Ile	Ser	Ile	Leu	Arg	Gly	Gly	Asn	Ile	
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Trp	Val	Leu	Pro	Lys	Asp	Phe	Lys	Glu	Lys	Met	Glu	Gln	Gln	Lys			

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&lt;400&gt; 128

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Phe Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val  
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Thr Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg  
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Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Gln Asp Lys Leu Ala  
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Thr Leu His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg  
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Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu  
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His Thr Thr Lys Glu Asn Glu Val Ser Ile Val Asn Ala Ser Phe His  
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Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met  
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 Ile Thr Ser Gln Gly Phe Leu Ala Gly Phe Leu Ala Gly Asp Glu Ser  
 500 505 510  
 Gly Gln Ser Trp Glu Met Ile Ser Gly Tyr Leu Tyr Gln Leu Leu Ala  
 515 520 525  
 Ala Ile Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser  
 530 535 540  
 Asn Arg Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Gly  
 545 550 555 560  
 Glu Gly Thr Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser  
 565 570 575

Pro Glu Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile  
 580 585 590  
 Ser Leu Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu  
 595 600 605  
 Cys Ser Leu Cys Val Gly Asn Gly Val Ala Val Arg Ser Ser Gln Asn  
 610 615 620  
 Asn Ile Cys Asp Tyr Leu Leu Pro Gly Lys Asn Leu Leu Leu Gln Thr  
 625 630 635 640  
 Ala Leu Val Asp His Val Ser Ser Val Arg Pro Asn Ile Phe Val Gly  
 645 650 655  
 Arg Val Glu Gly Ser Ala Val Tyr Arg Lys Trp Tyr Phe Glu Val Thr  
 660 665 670  
 Met Asp His Ile Glu Lys Thr Thr His Met Met Pro His Leu Arg Ile  
 675 680 685  
 Gly Trp Ala Asn Thr Thr Gly Tyr Val Pro Tyr Pro Gly Gly Gly Glu  
 690 695 700  
 Lys Trp Gly Gly Asn Gly Val Gly Asp Asp Leu Tyr Ser Tyr Gly Phe  
 705 710 715 720  
 Asp Gly Ala Tyr Leu Trp Ser Gly Gly Arg Lys Thr Pro Val Asn Arg  
 725 730 735  
 Thr His Ala Glu Glu Pro Tyr Ile Arg Lys Gly Asp Val Ile Gly Cys  
 740 745 750  
 Ala Leu Asp Leu Thr Val Pro Ile Ile Asn Phe Met Phe Asn Gly Val  
 755 760 765  
 Arg Val Thr Gly Ser Phe Thr Asn Phe Asn Leu Glu Gly Met Phe Phe  
 770 775 780  
 Pro Val Ile Ser Cys Ser Ser Lys Leu Ser Cys Arg Phe Leu Leu Gly  
 785 790 795 800  
 Gly Glu His Gly Arg Leu Arg Tyr Ala Ala Pro Glu Gly Tyr Ser Pro  
 805 810 815  
 Leu Val Glu Ser Leu Leu Pro Gln Gln Ile Leu Ser Leu Glu Pro Cys  
 820 825 830  
 Phe Tyr Phe Gly Asn Leu Ser Lys Arg Ala Leu Ala Gly Pro Pro Leu  
 835 840 845  
 Val Gln Asp Asp Thr Ala Phe Val Pro Thr Pro Val Asp Thr Leu Gln  
 850 855 860  
 Ile Thr Leu Pro Thr Tyr Val Glu Gln Ile Arg Asp Lys Leu Ala Glu  
 865 870 875 880  
 Asn Ile His Glu Met Trp Ala Met Asn Lys Ile Glu Ala Gly Trp Met  
 885 890 895

Tyr Gly Asp Gln Arg Glu Asp Leu His Lys Ile His Pro Cys Leu Val  
 900 905 910  
 Pro Phe Glu Arg Leu Pro Pro Ala Glu Lys Arg Tyr Asp Ile Gln Leu  
 915 920 925  
 Ala Val Gln Thr Leu Lys Thr Ile Leu Ala Leu Gly Tyr Tyr Ile Ser  
 930 935 940  
 Leu Asp Lys Pro Pro Ala Arg Ile Arg Asn Val Arg Leu Pro Asn Glu  
 945 950 955 960  
 Pro Phe Met Gln Ser Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser  
 965 970 975  
 Ala Val Thr Leu Thr Pro Lys Met Asp Glu Leu Val Asp Gln Leu Ala  
 980 985 990  
 Glu Asn Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp  
 995 1000 1005  
 Thr Tyr Gly Leu Asn Glu Asp Ser Asp Met His Arg Ser Pro His  
 1010 1015 1020  
 Leu Val Pro Tyr Pro Lys Val Asp Asp Ala Ile Lys Lys Ala Asn  
 1025 1030 1035  
 Arg Asp Thr Ala Ser Glu Thr Val Arg Thr Leu Leu Val Tyr Gly  
 1040 1045 1050  
 Tyr Met Leu Asp Pro Pro Thr Gly Glu Gln His Glu Ala Leu Leu  
 1055 1060 1065  
 Leu Glu Ala Ser Lys Gln Lys Gln Ala Asp Phe Arg Thr Tyr Arg  
 1070 1075 1080  
 Ala Glu Lys Asn Tyr Ala Val Ser Ser Gly Lys Trp Tyr Phe Glu  
 1085 1090 1095  
 Phe Glu Ile Leu Thr Ala Gly Pro Met Arg Val Gly Trp Ala His  
 1100 1105 1110  
 Ala Asp Met Ala Pro Gly Met Met Leu Gly Gln Asp Glu Asn Ser  
 1115 1120 1125  
 Trp Ala Phe Asp Gly Tyr Asn Glu Glu Lys Val Tyr Ser Gly Asn  
 1130 1135 1140  
 Thr Glu Ser Phe Gly Lys Gln Trp Ala Val Gly Asp Val Val Gly  
 1145 1150 1155  
 Val Phe Leu Asp Leu Ile Asp Lys Thr Ile Ser Phe Ser Leu Asn  
 1160 1165 1170  
 Gly Glu Leu Leu Met Asp Ala Leu Gly Gly Glu Thr Thr Phe Ala  
 1175 1180 1185  
 Asp Val Gln Gly Asp Asn Phe Val Pro Ala Cys Thr Leu Gly Val  
 1190 1195 1200

Gly	Gln	Lys	Ala	Arg	Leu	Thr	Tyr	Gly	Gln	Asp	Val	Asn	Thr	Leu
1205						1210					1215			
Lys	Tyr	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	Gly	Tyr	Glu	Pro	Phe
1220						1225					1230			
Cys	Val	Asn	Met	Lys	Arg	Asp	Val	Thr	His	Trp	Tyr	Thr	Lys	Asp
1235						1240					1245			
Gln	Pro	Ile	Phe	Glu	Asn	Thr	Asp	Glu	Met	Ile	Asp	Thr	Arg	Ile
1250						1255					1260			
Asp	Val	Thr	Arg	Ile	Pro	Ala	Gly	Ser	Asp	Thr	Pro	Pro	Cys	Leu
1265						1270					1275			
Lys	Ile	Ser	His	Asn	Thr	Phe	Glu	Thr	Met	Glu	Lys	Ala	Asn	Trp
1280						1285					1290			
Glu	Phe	Leu	Arg	Leu	Ser	Leu	Pro	Val	Ile	Cys	His	Asn	Glu	Phe
1295						1300					1305			
Ile	Asp	Glu	Ala	Glu	Lys	Ala	Arg	Arg	Trp	Val	Glu	Ile	Lys	Asp
1310						1315					1320			
Arg	Gln	Gln	Ile	Leu	Met	Lys	Glu	Ala	Val	Glu	Ala	Gln	Met	Pro
1325						1330					1335			
Ala	His	Ile	Asp	Gln	Ile	Met	Arg	Ser	Gly	Phe	Thr	Met	Asn	Asp
1340						1345					1350			
Ile	Lys	Gly	Leu	His	Tyr	Glu	Asp	Asn	Gln	Glu	Glu	Leu	Pro	Ser
1355						1360					1365			
Ser	Lys	Met	Lys	Arg	Leu	Pro	Ser	Arg	Pro	Pro	Arg	Lys	Gly	Ser
1370						1375					1380			
Met	Thr	Arg	Gly	Val	Thr	Ile	Gln	Asn	Tyr	Asn	Asn	Leu	Gln	Pro
1385						1390					1395			
Gly	Gln	Val	Asn	Gly	Met	His	Arg	Ser	Thr	Ser	Glu	Ala	Glu	Met
1400						1405					1410			
Ala	Lys	Tyr	Asp	Leu	Gly	Ala	Gln	Gly	Leu	Thr	Pro	Asp	Asp	Lys
1415						1420					1425			
Lys	Asp	Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys	Phe	Phe	Arg	Ser	Lys
1430						1435					1440			
Arg	Gly	Glu	Ser	Ser	Asp	Arg	Ala	Lys	Ser	Arg	Lys	Ser	Lys	Thr
1445						1450					1455			
Pro	Asp	Pro	Phe	Ser	Asp	Thr	Glu	Val	Ser	Pro	Glu	Arg	Gly	Ala
1460						1465					1470			
Arg	Arg	Pro	Asn	Pro	Gln	Ile	Lys	Val	Ser	Gln	Ala	Asn	Gln	Arg
1475						1480					1485			
Tyr	Asn	Gly	Met	Asn	Ala	Arg	Pro	Ser	Arg	Thr	Asn	Leu	Tyr	Gly
1490						1495					1500			

Ser	Gln	Val	Gly	Leu	Asn	Met	Ala	Thr	Pro	Thr	Gln	Asp	Arg	Lys
1505						1510					1515			
Gln	Met	Thr	Thr	Ser	Thr	Leu	Ala	Gln	Ser	Ala	Thr	Glu	Thr	Val
1520						1525					1530			
Gly	Asn	Glu	Ile	Phe	Asp	Ala	Glu	Cys	Leu	Lys	Leu	Ile	Asn	Glu
1535						1540					1545			
Tyr	Phe	Tyr	Gly	Val	Arg	Ile	Tyr	Pro	Gly	Gln	Asp	Pro	Thr	His
1550						1555					1560			
Val	Tyr	Ile	Gly	Trp	Val	Thr	Thr	Gln	Tyr	His	Leu	His	Ser	Lys
1565						1570					1575			
Asp	Phe	Asn	Gln	Ser	Lys	Val	Thr	Lys	Ser	Ser	Val	Ile	Ile	Thr
1580						1585					1590			
Asp	Asp	Tyr	Asp	Arg	Val	Val	Glu	Asn	Val	Asn	Arg	Gln	Ser	Cys
1595						1600					1605			
Tyr	Met	Val	Arg	Ala	Asp	Glu	Leu	Tyr	Asn	Glu	Val	Met	Ala	Glu
1610						1615					1620			
Ala	Thr	Ala	Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Ile	Gly	Cys	Ser
1625						1630					1635			
Val	Asp	Thr	Ser	Thr	Gly	Ser	Val	Ser	Phe	Thr	Cys	Glu	Gly	Lys
1640						1645					1650			
Asp	Thr	Ser	Phe	Lys	Phe	Lys	Met	Glu	Pro	Glu	Thr	Lys	Leu	Phe
1655						1660					1665			
Pro	Ala	Ile	Phe	Val	Glu	Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile
1670						1675					1680			
Glu	Leu	Gly	Arg	Ser	Ala	Thr	Ser	Leu	Pro	Leu	Ser	Ala	Ala	Val
1685						1690					1695			
Leu	Pro	Thr	Ser	Asp	Lys	His	Val	Ile	Pro	Gln	Phe	Pro	Pro	Arg
1700						1705					1710			
Leu	Lys	Val	Gln	Cys	Leu	Lys	Pro	His	Gln	Trp	Ala	Arg	Val	Pro
1715						1720					1725			
Asn	Gln	Ser	Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Asp	Ile	Arg
1730						1735					1740			
Gly	Trp	Ser	Met	Leu	Cys	Glu	Asp	Ala	Val	Ser	Met	Leu	Ala	Leu
1745						1750					1755			
His	Ile	Pro	Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu	Pro	Ile
1760						1765					1770			
Glu	Met	Asp	Lys	Leu	Leu	Ser	Phe	His	Ser	His	Thr	Leu	Thr	Leu
1775						1780					1785			
Tyr	Ala	Ala	Leu	Cys	Tyr	Gln	Ser	Asn	Tyr	Arg	Ala	Ala	His	Ala
1790						1795					1800			

Leu Cys	Thr His Val Asp	Gln	Lys Gln Leu Leu Tyr	Ala Ile Gln
1805		1810		1815
Ser Gln	Tyr Met Ser Gly	Pro	Leu Arg Gln Gly Phe	Tyr Asp Leu
1820		1825		1830
Leu Ile	Ala Leu His Leu	Glu	Ser His Ala Thr Thr	Met Glu Ala
1835		1840		1845
Cys Lys	Asn Glu Phe Val	Ile	Pro Leu Gly Pro Glu	Leu Lys Ala
1850		1855		1860
Leu Tyr	Glu Glu Pro Asp	Met	Gly His Ser Leu Arg	Ser Leu Gln
1865		1870		1875
Thr Glu	Ser Val Arg Pro	Gln	Met Lys Met Thr Asp	Ile Ala Glu
1880		1885		1890
Ser Ile	Thr Glu Ile Ser	Asn	Leu Tyr Ser Pro Tyr	Phe Pro Leu
1895		1900		1905
Glu Val	Ala Arg Glu Phe	Val	Met Gln Ala Leu Ala	Glu Ala Val
1910		1915		1920
Glu Thr	Asn Gln Val His	Asn	Arg Asp Pro Val Gly	Gly Ser Asn
1925		1930		1935
Glu Asn	Leu Phe Leu Pro	Leu	Ile Lys Leu Val Asp	Arg Leu Leu
1940		1945		1950
Leu Val	Gly Met Met Arg	Asp	Glu Asp Val Glu Lys	Leu Leu Ile
1955		1960		1965
Met Thr	Asn Pro Glu Thr	Trp	Asp Pro Ser Phe Asp	Lys Glu Gly
1970		1975		1980
Lys Asp	Glu His Arg Lys	Gly	Leu Leu His Met Lys	Met Ala Glu
1985		1990		1995
Gly Ala	Lys Leu Gln Met	Cys	Tyr Leu Leu Gln His	Leu Asn Asp
2000		2005		2010
Ile Gln	Leu Arg His Arg	Val	Glu Ala Ile Ile Ala	Phe Ala His
2015		2020		2025
Asp Phe	Val Gly Asp Leu	Gln	Thr Asp Gln Leu Arg	Arg Tyr Thr
2030		2035		2040
Glu Ile	Lys Gln Ser Asp	Leu	Pro Ser Ala Val Ala	Ala Lys Lys
2045		2050		2055
Thr Arg	Glu Phe Arg Cys	Pro	Pro Arg Glu Gln Met	Asn Ala Ile
2060		2065		2070
Leu Ser	Phe Lys His Leu	Glu	Glu Glu Asp Lys Glu	Asn Cys Pro
2075		2080		2085
Cys Gly	Glu Glu Leu Ile	Ala	Arg Met Asn Glu Phe	His Asp Thr
2090		2095		2100

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Glu Lys Gly Tyr Pro Asp Leu Gly Trp Asp Pro Val Glu Gly Glu	2405	2410	2415
Arg Tyr Leu Asp Phe Leu Arg Phe Cys Val Trp Val Asn Gly Glu	2420	2425	2430
Ser Val Glu Glu Asn Ala Asn Leu Val Ile Arg Leu Leu Ile Arg	2435	2440	2445
Arg Pro Glu Cys Leu Gly Pro Ala Leu Arg Gly Glu Gly Glu Gly	2450	2455	2460
Leu Leu Lys Ala Ile Val Asp Ala Asn Lys Met Ser Glu Arg Ile	2465	2470	2475
Ala Asp Arg Arg Lys Leu Arg Glu Met Glu Gln Glu Gly Asp Val	2480	2485	2490
Asn Phe Ser His Pro Leu Pro Glu Ser Asp Glu Asp Glu Asp Tyr	2495	2500	2505
Ile Asp Thr Gly Ala Ala Ile Leu Asn Phe Tyr Cys Thr Leu Val	2510	2515	2520
Asp Leu Leu Gly Arg Cys Ala Pro Asp Ala Gly Val Ile Ala Leu	2525	2530	2535
Gly Lys Asn Glu Ser Leu Arg Ala Arg Ala Ile Leu Arg Ser Leu	2540	2545	2550
Val Pro Leu Glu Asp Leu Gln Gly Val Leu Ser Leu Arg Phe Thr	2555	2560	2565
Leu Asn Asn Pro Ala Ala Gly Glu Glu Arg Pro Lys Ser Asp Met	2570	2575	2580
Pro Ser Gly Leu Ile Pro Gly His Lys Gln Ser Val Gly Leu Phe	2585	2590	2595
Leu Glu Arg Val Tyr Gly Ile Glu Thr Gln Glu Leu Phe Tyr Lys	2600	2605	2610
Leu Leu Glu Glu Ala Phe Leu Pro Asp Leu Arg Ala Ala Thr Met	2615	2620	2625
Leu Asp Arg Asn Asp Gly Cys Glu Ser Asp Met Ala Leu Ser Met	2630	2635	2640
Asn Arg Tyr Ile Gly Asn Ser Ile Leu Pro Leu Leu Ile Lys His	2645	2650	2655
Ala Tyr Phe Tyr Asn Glu Ala Glu Asn Tyr Ala Ser Leu Leu Asp	2660	2665	2670
Ala Thr Leu His Thr Val Tyr Arg Leu Ser Lys Asn Arg Met Leu	2675	2680	2685
Thr Lys Gly Gln Arg Glu Ala Val Ser Asp Phe Leu Val Ala Leu	2690	2695	2700



Thr	Ser	Ala	Met	Gln	Pro	Ser	Met	Leu	Leu	Lys	Leu	Leu	Arg	Lys
2705						2710					2715			
Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val	Ala
2720						2725					2730			
Leu	Arg	Leu	Leu	Thr	Leu	His	Tyr	Glu	Arg	Cys	Ala	Lys	Tyr	Tyr
2735						2740					2745			
Gly	Ser	Thr	Gly	Ala	Gly	Gln	Gly	Ala	Phe	Gly	Ala	Ser	Ser	Asp
2750						2755					2760			
Glu	Glu	Lys	Arg	Leu	Thr	Met	Met	Leu	Phe	Ser	Asn	Ile	Phe	Asp
2765						2770					2775			
Ser	Leu	Ser	Lys	Met	Asp	Tyr	Glu	Pro	Glu	Leu	Phe	Gly	Lys	Ala
2780						2785					2790			
Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro	Asp	Tyr
2795						2800					2805			
Ser	Leu	Ser	Lys	Asn	Tyr	Asp	Asp	Glu	Phe	Tyr	Gly	Lys	Glu	Gln
2810						2815					2820			
Ala	Ala	Gly	Asp	Leu	Asp	Asn	Pro	Gln	Tyr	Asp	Pro	Gln	Pro	Ile
2825						2830					2835			
Asn	Thr	Ser	Ser	Val	Ala	Leu	Asn	Asn	Asp	Leu	Asn	Thr	Ile	Val
2840						2845					2850			
Gln	Lys	Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser	Arg	Lys
2855						2860					2865			
Ile	Glu	Asn	Gly	Trp	Val	Tyr	Gly	Glu	Gly	Trp	Ser	Asp	Ser	Gln
2870						2875					2880			
Lys	Thr	His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Asn	Asp	Tyr
2885						2890					2895			
Glu	Lys	Glu	Arg	Tyr	Lys	Glu	Pro	Val	Arg	Glu	Ser	Leu	Lys	Ala
2900						2905					2910			
Leu	Leu	Ala	Ile	Gly	Trp	Ser	Val	Glu	His	Ser	Glu	Val	Asp	Ile
2915						2920					2925			
Pro	Ser	Asn	Asn	Arg	Ser	Ser	Met	Arg	Arg	Gln	Ser	Lys	Ser	Gly
2930						2935					2940			
Gly	Arg	Pro	Pro	Glu	Ile	Val	Thr	Asp	Ser	Ala	Thr	Pro	Phe	Asp
2945						2950					2955			
Tyr	Asn	Pro	His	Pro	Val	Asp	Met	Thr	Asn	Leu	Thr	Leu	Ser	Arg
2960						2965					2970			
Glu	Met	Gln	Asn	Met	Ala	Glu	Arg	Leu	Ala	Asp	Asn	Ala	His	Asp
2975						2980					2985			
Ile	Trp	Ala	Lys	Lys	Lys	Lys	Glu	Glu	Leu	Val	Thr	Asn	Gly	Gly
2990						2995					3000			

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Arg	His	Lys	Pro	Ala	Leu	Gly	Ser	Cys	Leu	Gly	Ala	Phe	Ser	Ser
3305						3310					3315			
Thr	Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro	His	Leu	Asn	Lys	His	Asn
3320						3325					3330			
Gln	Phe	Ser	Leu	Leu	Asn	Arg	Ile	Ala	Asp	His	Ser	Leu	Glu	Ala
3335						3340					3345			
Gln	Asp	Ile	Met	Gln	Lys	Met	Glu	Gln	Cys	Met	Pro	Thr	Leu	Glu
3350						3355					3360			
Thr	Ile	Leu	Gly	Glu	Val	Asp	Gln	Phe	Val	Glu	Ser	Asp	Lys	Thr
3365						3370					3375			
Tyr	Asn	Glu	Ala	Pro	His	Ile	Ile	Asp	Val	Val	Leu	Pro	Leu	Leu
3380						3385					3390			
Cys	Ser	Tyr	Leu	Pro	Phe	Trp	Trp	Ala	Gln	Gly	Pro	Asp	Asn	Val
3395						3400					3405			
Thr	Pro	Thr	Gly	Gly	Asn	His	Val	Thr	Met	Val	Thr	Ala	Glu	His
3410						3415					3420			
Met	Asn	Gln	Leu	Leu	Lys	Asn	Val	Leu	Lys	Leu	Ile	Lys	Lys	Asn
3425						3430					3435			
Ile	Gly	Asn	Glu	Asn	Ala	Pro	Trp	Met	Thr	Arg	Ile	Ala	Thr	Tyr
3440						3445					3450			
Thr	Gln	Gln	Ile	Ile	Ile	Asn	Ser	Ser	Glu	Glu	Leu	Leu	Arg	Asp
3455						3460					3465			
Ser	Phe	Leu	Pro	Leu	Ala	Glu	Arg	Val	Arg	Lys	Arg	Thr	Asp	Asn
3470						3475					3480			
Met	Phe	His	Lys	Glu	Glu	Ser	Leu	Arg	Gly	Phe	Ile	Lys	Ser	Ser
3485						3490					3495			
Thr	Asp	Asp	Thr	Ser	Gln	Val	Glu	Ser	Gln	Ile	Gln	Glu	Asp	Trp
3500						3505					3510			
Gln	Leu	Leu	Val	Arg	Asp	Ile	Tyr	Ser	Phe	Tyr	Pro	Leu	Leu	Ile
3515						3520					3525			
Lys	Tyr	Val	Asp	Leu	Gln	Arg	Asn	His	Trp	Leu	Arg	Asn	Asn	Val
3530						3535					3540			
Pro	Glu	Ala	Glu	Glu	Leu	Tyr	Asn	His	Val	Ala	Glu	Ile	Phe	Asn
3545						3550					3555			
Ile	Trp	Ser	Lys	Ser	Gln	Tyr	Phe	Leu	Lys	Glu	Glu	Gln	Asn	Phe
3560						3565					3570			
Ile	Ser	Ala	Asn	Glu	Ile	Asp	Asn	Met	Val	Leu	Ile	Met	Pro	Thr
3575						3580					3585			
Ala	Thr	Arg	Arg	Val	Thr	Ala	Val	Thr	Asp	Gly	Thr	Pro	Gln	Gly
3590						3595					3600			

Gly Gly	Lys Lys Lys Lys Lys	His Arg Asp Lys Lys	Arg Asp Lys
3605	3610	3615	
Asp Lys	Glu Val Gln Ala Ser	Leu Met Val Ala Cys	Leu Lys Arg
3620	3625	3630	
Leu Leu	Pro Val Gly Leu Asn	Leu Phe Ala Gly Arg	Glu Gln Glu
3635	3640	3645	
Leu Val	Gln His Cys Lys Asp	Arg Phe Leu Lys Lys	Met Ser Glu
3650	3655	3660	
Gln Asp	Val Ala Glu Phe Ala	Lys Thr Gln Leu Thr	Leu Pro Asp
3665	3670	3675	
Lys Ile	Asp Pro Ala Asp Glu	Met Ser Trp Gln His	Tyr Leu Tyr
3680	3685	3690	
Ser Lys	Leu Gly Ser Lys Ser	Lys Ser Asn Ile Thr	Val Glu Thr
3695	3700	3705	
Ala Glu	Asn Lys Ala Lys Ile	Ile Asp Asp Thr Val	Glu Arg Ile
3710	3715	3720	
Val Ala	Met Ser Lys Val Leu	Phe Gly Leu His Met	Ile Asp His
3725	3730	3735	
Pro Gln	Gln Met Ser Lys Asn	Val Tyr Arg Ser Val	Val Ser Ile
3740	3745	3750	
Gln Arg	Lys Arg Ala Val Ile	Ala Cys Phe Arg Gln	Thr Ser Leu
3755	3760	3765	
His Ser	Leu Pro Arg His Arg	Ala Cys Asn Ile Phe	Ala Arg Thr
3770	3775	3780	
Tyr Tyr	Glu Leu Trp Leu Glu	Glu Glu Asn Ile Gly	Gln Glu Val
3785	3790	3795	
Met Ile	Glu Asp Leu Thr Gln	Ser Phe Glu Asp Ala	Glu Leu Lys
3800	3805	3810	
Lys Ser	Asp Val Val Glu Glu	Gly Glu Lys Pro Asp	Pro Leu Thr
3815	3820	3825	
Gln Leu	Val Thr Thr Phe Cys	Arg Gly Ala Met Thr	Glu Arg Ser
3830	3835	3840	
Gly Ala	Leu Gln Glu Asp Pro	Leu Tyr Met Ser Tyr	Ala His Ile
3845	3850	3855	
Ile Ala	Lys Ser Cys Gly Glu	Glu Glu Glu Glu Gly	Gly Gly Glu
3860	3865	3870	
Glu Glu	Glu Gly Gly Gly Glu	Ala Glu Ala Glu Asp	Glu Gly Arg
3875	3880	3885	
Ala Ser	Ile His Glu Gln Glu	Met Glu Lys Gln Lys	Leu Leu Phe
3890	3895	3900	

His	Gln	Ala	Arg	Leu	Ala	Asp	Arg	Gly	Val	Ala	Glu	Met	Val	Leu
3905						3910					3915			
Leu	His	Ile	Ser	Ala	Ser	Lys	Gly	Leu	Pro	Ser	Glu	Met	Val	Met
3920						3925					3930			
Lys	Thr	Leu	Gln	Leu	Gly	Ile	Ser	Ile	Leu	Arg	Gly	Gly	Asn	Ile
3935						3940					3945			
Asp	Ile	Gln	Met	Gly	Met	Leu	Asn	His	Leu	Lys	Asp	Lys	Lys	Asp
3950						3955					3960			
Val	Gly	Phe	Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser
3965						3970					3975			
Val	Leu	Asp	Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly
3980						3985					3990			
Leu	Gly	Val	Gly	Leu	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His
3995						4000					4005			
Asp	Ala	Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr
4010						4015					4020			
Cys	Glu	Gly	His	Asn	Leu	Asp	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln
4025						4030					4035			
Ala	Gly	Asn	Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp
4040						4045					4050			
Tyr	Leu	Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His
4055						4060					4065			
Tyr	Ser	Ser	Lys	Glu	Leu	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe
4070						4075					4080			
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1250 1255 1260
gat gtg acc agg ata cca gct ggt tca gat aca cct cca tgc ctc 3834
Asp Val Thr Arg Ile Pro Ala Gly Ser Asp Thr Pro Pro Cys Leu
1265 1270 1275
aag att tcc cac aac acg ttt gag acg atg gag aaa gct aac tgg 3879
Lys Ile Ser His Asn Thr Phe Glu Thr Met Glu Lys Ala Asn Trp
1280 1285 1290
gag ttc tta cgt ctc tca ctg cct gtc atc tgc cat aac gag ttc 3924
Glu Phe Leu Arg Leu Ser Leu Pro Val Ile Cys His Asn Glu Phe
1295 1300 1305
att gac gag gca gaa aaa gcc agg cgt tgg gta gaa atc aag gac 3969
Ile Asp Glu Ala Glu Lys Ala Arg Arg Trp Val Glu Ile Lys Asp
1310 1315 1320
cgc caa cag atc cta atg aaa gag gca gtt gaa gct cag atg ccc 4014
Arg Gln Gln Ile Leu Met Lys Glu Ala Val Glu Ala Gln Met Pro
1325 1330 1335

gcc cat att gac cag atc atg agg agc ggt ttc acc atg aac gat	4059
Ala His Ile Asp Gln Ile Met Arg Ser Gly Phe Thr Met Asn Asp	
1340 1345 1350	
att aaa ggt ttg cac tac gaa gac aat cag gaa gag ttg ccc agc	4104
Ile Lys Gly Leu His Tyr Glu Asp Asn Gln Glu Glu Leu Pro Ser	
1355 1360 1365	
tcc aag atg aag cgc ctg cct tca agg cca cca cgt aag gga tcc	4149
Ser Lys Met Lys Arg Leu Pro Ser Arg Pro Pro Arg Lys Gly Ser	
1370 1375 1380	
atg aca aga ggt gtt act ata caa aat tac aat aat ttg caa cca	4194
Met Thr Arg Gly Val Thr Ile Gln Asn Tyr Asn Asn Leu Gln Pro	
1385 1390 1395	
ggt caa gtc aat ggc atg cac cgg tcg acc agt gaa gct gaa atg	4239
Gly Gln Val Asn Gly Met His Arg Ser Thr Ser Glu Ala Glu Met	
1400 1405 1410	
gcc aag tat gac ttg gga gcg caa ggt ttg acg cct gat gat aag	4284
Ala Lys Tyr Asp Leu Gly Ala Gln Gly Leu Thr Pro Asp Asp Lys	
1415 1420 1425	
aag gac aag agg gga cga tcg cct ttc aag ttc ttc aga agc aag	4329
Lys Asp Lys Arg Gly Arg Ser Pro Phe Lys Phe Phe Arg Ser Lys	
1430 1435 1440	
cgc ggc gaa agc agt gat cgt gcc aaa tcc cgt aaa tcc aaa act	4374
Arg Gly Glu Ser Ser Asp Arg Ala Lys Ser Arg Lys Ser Lys Thr	
1445 1450 1455	
cca gat ccc ttc agc gat acc gag gta tca cca gaa cgt ggt gct	4419
Pro Asp Pro Phe Ser Asp Thr Glu Val Ser Pro Glu Arg Gly Ala	
1460 1465 1470	
cga agg cct aac cct cag atc aaa gtg tca cag gcc aat caa aga	4464
Arg Arg Pro Asn Pro Gln Ile Lys Val Ser Gln Ala Asn Gln Arg	
1475 1480 1485	
tat aac ggc atg aac gcg cgt cct agc agg acc aac ttg tat ggg	4509
Tyr Asn Gly Met Asn Ala Arg Pro Ser Arg Thr Asn Leu Tyr Gly	
1490 1495 1500	
agc caa gtt ggt tta aac atg gcg acg ccc acg caa gac agg aag	4554
Ser Gln Val Gly Leu Asn Met Ala Thr Pro Thr Gln Asp Arg Lys	
1505 1510 1515	
cag atg acg acg agc act ctc gcg cag tcg gct acg gaa act gtc	4599
Gln Met Thr Thr Ser Thr Leu Ala Gln Ser Ala Thr Glu Thr Val	
1520 1525 1530	
ggc aat gag atc ttc gat gca gag tgc ttg aag ctc atc aat gag	4644
Gly Asn Glu Ile Phe Asp Ala Glu Cys Leu Lys Leu Ile Asn Glu	
1535 1540 1545	
tac ttt tat gga gtc agg atc tac cca ggt cag gac cca aca cac	4689
Tyr Phe Tyr Gly Val Arg Ile Tyr Pro Gly Gln Asp Pro Thr His	
1550 1555 1560	

gtg	tac	atc	ggc	tgg	gtg	acc	acc	cag	tac	cac	ttg	cac	tct	aag	4734
Val	Tyr	Ile	Gly	Trp	Val	Thr	Thr	Gln	Tyr	His	Leu	His	Ser	Lys	
	1565					1570					1575				
gac	ttc	aac	cag	agc	aag	gtc	acc	aag	tcc	tct	gtc	atc	atc	act	4779
Asp	Phe	Asn	Gln	Ser	Lys	Val	Thr	Lys	Ser	Ser	Val	Ile	Ile	Thr	
	1580					1585					1590				
gat	gat	tac	gat	agg	gtt	gtt	gag	aac	gta	aac	cgg	cag	tcc	tgc	4824
Asp	Asp	Tyr	Asp	Arg	Val	Val	Glu	Asn	Val	Asn	Arg	Gln	Ser	Cys	
	1595					1600					1605				
tac	atg	gtg	cga	gct	gac	gag	cta	tac	aac	gag	gtg	atg	gcg	gaa	4869
Tyr	Met	Val	Arg	Ala	Asp	Glu	Leu	Tyr	Asn	Glu	Val	Met	Ala	Glu	
	1610					1615					1620				
gcc	acg	gcc	aag	ggc	gcc	tgc	cag	ggc	atg	ttc	atc	ggc	tgc	tcc	4914
Ala	Thr	Ala	Lys	Gly	Ala	Ser	Gln	Gly	Met	Phe	Ile	Gly	Cys	Ser	
	1625					1630					1635				
gtc	gac	acc	tcc	acc	ggc	agc	gtg	tcc	ttc	acc	tgc	gag	ggg	aag	4959
Val	Asp	Thr	Ser	Thr	Gly	Ser	Val	Ser	Phe	Thr	Cys	Glu	Gly	Lys	
	1640					1645					1650				
gac	acc	agc	ttc	aag	ttc	aag	atg	gaa	cca	gaa	aca	aaa	ctg	ttc	5004
Asp	Thr	Ser	Phe	Lys	Phe	Lys	Met	Glu	Pro	Glu	Thr	Lys	Leu	Phe	
	1655					1660					1665				
ccc	gog	atc	ttc	gta	gaa	gcg	acc	tcc	aag	gag	atc	ctg	cag	ata	5049
Pro	Ala	Ile	Phe	Val	Glu	Ala	Thr	Ser	Lys	Glu	Ile	Leu	Gln	Ile	
	1670					1675					1680				
gag	ctg	ggc	aga	tca	gcc	acc	agc	ctt	cca	cta	tca	gcc	gct	gta	5094
Glu	Leu	Gly	Arg	Ser	Ala	Thr	Ser	Leu	Pro	Leu	Ser	Ala	Ala	Val	
	1685					1690					1695				
cta	cca	acg	agt	gat	aag	cat	gtc	ata	cca	cag	ttc	cca	ccg	agg	5139
Leu	Pro	Thr	Ser	Asp	Lys	His	Val	Ile	Pro	Gln	Phe	Pro	Pro	Arg	
	1700					1705					1710				
ttg	aag	gtg	cag	tgc	ttg	aaa	cca	cat	cag	tgg	gct	agg	gta	ccg	5184
Leu	Lys	Val	Gln	Cys	Leu	Lys	Pro	His	Gln	Trp	Ala	Arg	Val	Pro	
	1715					1720					1725				
aac	caa	tcc	cta	caa	gtc	cac	gct	ctg	aag	ttg	tcc	gac	atc	cgc	5229
Asn	Gln	Ser	Leu	Gln	Val	His	Ala	Leu	Lys	Leu	Ser	Asp	Ile	Arg	
	1730					1735					1740				
ggt	tgg	tgc	atg	ctg	tgt	gaa	gac	gca	gtg	tct	atg	ctg	gct	ttg	5274
Gly	Trp	Ser	Met	Leu	Cys	Glu	Asp	Ala	Val	Ser	Met	Leu	Ala	Leu	
	1745					1750					1755				
cac	ata	ccg	gag	gaa	gat	cgt	tgc	ata	gac	att	ttg	gag	ctg	ata	5319
His	Ile	Pro	Glu	Glu	Asp	Arg	Cys	Ile	Asp	Ile	Leu	Glu	Leu	Ile	
	1760					1765					1770				
gaa	atg	gac	aaa	ctt	tta	agt	ttc	cat	tct	cac	acc	ctc	acg	tta	5364
Glu	Met	Asp	Lys	Leu	Leu	Ser	Phe	His	Ser	His	Thr	Leu	Thr	Leu	
	1775					1780					1785				



tac gct gct tta tgt tac cag agt aac tac agg gct gcc cac gct	5409
Tyr Ala Ala Leu Cys Tyr Gln Ser Asn Tyr Arg Ala Ala His Ala	
1790 1795 1800	
ctg tgc acg cac gtg gac cag aag cag ctg ctg tac gcg atc cag	5454
Leu Cys Thr His Val Asp Gln Lys Gln Leu Leu Tyr Ala Ile Gln	
1805 1810 1815	
tcg cag tac atg tcg ggc ccg ctg cgc caa ggc ttc tac gat ctt	5499
Ser Gln Tyr Met Ser Gly Pro Leu Arg Gln Gly Phe Tyr Asp Leu	
1820 1825 1830	
ctc ata gcg ctg cat ctc gag tcg cat gcc acc acc atg gag gcg	5544
Leu Ile Ala Leu His Leu Glu Ser His Ala Thr Thr Met Glu Ala	
1835 1840 1845	
tgt aag aac gag ttc gtg atc ccg ctg ggc ccg gag ctg aag gcg	5589
Cys Lys Asn Glu Phe Val Ile Pro Leu Gly Pro Glu Leu Lys Ala	
1850 1855 1860	
ctg tac gag gag ccc gac atg gga cac tcg ctg cgc tcg ctg cag	5634
Leu Tyr Glu Glu Pro Asp Met Gly His Ser Leu Arg Ser Leu Gln	
1865 1870 1875	
acc gag agc gtg cgg ccg cag atg aag atg acc gat atc gct gaa	5679
Thr Glu Ser Val Arg Pro Gln Met Lys Met Thr Asp Ile Ala Glu	
1880 1885 1890	
agt ata acc gag atc agc aac cta tac tcg ccg tac ttc ccg ctg	5724
Ser Ile Thr Glu Ile Ser Asn Leu Tyr Ser Pro Tyr Phe Pro Leu	
1895 1900 1905	
gag gtg gtg cgc gag ttc gtg atg cag gcg ctg gct gaa gcc gtg	5769
Glu Val Val Arg Glu Phe Val Met Gln Ala Leu Ala Glu Ala Val	
1910 1915 1920	
gag acc aac cag gtg cac aac cgg gat cct gtc ggg ggg agc aat	5814
Glu Thr Asn Gln Val His Asn Arg Asp Pro Val Gly Gly Ser Asn	
1925 1930 1935	
gag aac ctg ttc ctg cct cta ata aag ctg gtg gac cgt ctt cta	5859
Glu Asn Leu Phe Leu Pro Leu Ile Lys Leu Val Asp Arg Leu Leu	
1940 1945 1950	
cta gtc ggc atg atg cgc gac gag gat gtg gag aag cta ctc atc	5904
Leu Val Gly Met Met Arg Asp Glu Asp Val Glu Lys Leu Leu Ile	
1955 1960 1965	
atg acc aac cct gag acg tgg gac ccc tcg ttt gat aaa gag ggt	5949
Met Thr Asn Pro Glu Thr Trp Asp Pro Ser Phe Asp Lys Glu Gly	
1970 1975 1980	
aaa gac gag cac cgc aaa ggt cta ctc cac atg aaa atg gcg gaa	5994
Lys Asp Glu His Arg Lys Gly Leu Leu His Met Lys Met Ala Glu	
1985 1990 1995	
ggc gct aag ctg cag atg tgt tac tta ctg caa cat ctc aac gac	6039
Gly Ala Lys Leu Gln Met Cys Tyr Leu Leu Gln His Leu Asn Asp	
2000 2005 2010	

ata cag	ctg cgg	cac agg	gtc	gaa gct	atc att	gcg	ttt gcg	cat	6084
Ile Gln	Leu Arg	His Arg	Val	Glu Ala	Ile Ile	Ala	Phe Ala	His	
2015			2020			2025			
gac ttc	gtc ggt	gat cta	cag	act gat	cag ctc	aga	cgt tac	acg	6129
Asp Phe	Val Gly	Asp Leu	Gln	Thr Asp	Gln Leu	Arg	Arg Tyr	Thr	
2030			2035			2040			
gaa atc	aag cag	tcg gac	ttg	ccg agc	gcg gtg	gcc	gct aag	aag	6174
Glu Ile	Lys Gln	Ser Asp	Leu	Pro Ser	Ala Val	Ala	Ala Lys	Lys	
2045			2050			2055			
acc agg	gag ttc	cgg tgt	ccg	cct aga	gaa cag	atg	aac gct	ata	6219
Thr Arg	Glu Phe	Arg Cys	Pro	Pro Arg	Glu Gln	Met	Asn Ala	Ile	
2060			2065			2070			
ttg agt	ttc aag	cac tta	gag	gag gag	gac aag	gag	aac tgt	ccg	6264
Leu Ser	Phe Lys	His Leu	Glu	Glu Glu	Asp Lys	Glu	Asn Cys	Pro	
2075			2080			2085			
tgc ggc	gag gag	ctg atc	gcg	cgc atg	aac gag	ttc	cac gac	acc	6309
Cys Gly	Glu Glu	Leu Ile	Ala	Arg Met	Asn Glu	Phe	His Asp	Thr	
2090			2095			2100			
ctc atg	gcg cac	gtc tcg	ctg	cac gcg	ctg cag	gag	ccc gat	gcc	6354
Leu Met	Ala His	Val Ser	Leu	His Ala	Leu Gln	Glu	Pro Asp	Ala	
2105			2110			2115			
gcg gaa	aat caa	gaa cct	gaa	gca aaa	ccg ggg	gca	ttc ggc	aag	6399
Ala Glu	Asn Gln	Glu Pro	Glu	Ala Lys	Pro Gly	Ala	Phe Gly	Lys	
2120			2125			2130			
cta tac	aac att	atc aat	acg	gtc aag	gaa tta	gaa	gag gaa	gct	6444
Leu Tyr	Asn Ile	Ile Asn	Thr	Val Lys	Glu Leu	Glu	Glu Glu	Ala	
2135			2140			2145			
aag gca	ata gaa	gag cct	ccg	aag aag	acg cct	gag	gag aag	ttc	6489
Lys Ala	Ile Glu	Glu Pro	Pro	Lys Lys	Thr Pro	Glu	Glu Lys	Phe	
2150			2155			2160			
cgt aag	gtc ctc	atc cag	acc	ata gtg	aac tgg	gct	gag gag	tcg	6534
Arg Lys	Val Leu	Ile Gln	Thr	Ile Val	Asn Trp	Ala	Glu Glu	Ser	
2165			2170			2175			
cag ata	gaa aca	ccc aaa	ctc	gtc aga	gaa atg	ttc	agc ctt	ctt	6579
Gln Ile	Glu Thr	Pro Lys	Leu	Val Arg	Glu Met	Phe	Ser Leu	Leu	
2180			2185			2190			
gtc cgc	cag tac	gac gca	gta	ggc gag	ctg atc	cgc	gct tta	gag	6624
Val Arg	Gln Tyr	Asp Ala	Val	Gly Glu	Leu Ile	Arg	Ala Leu	Glu	
2195			2200			2205			
aag aca	tac gtc	atc aac	gct	aag acc	aag ttg	gat	gtc gcg	ggg	6669
Lys Thr	Tyr Val	Ile Asn	Ala	Lys Thr	Lys Leu	Asp	Val Ala	Gly	
2210			2215			2220			
atg tgg	gtg ggg	ctc agc	cag	atc cga	gcc ctc	ctg	ccg gtg	cag	6714
Met Trp	Val Gly	Leu Ser	Gln	Ile Arg	Ala Leu	Leu	Pro Val	Gln	
2225			2230			2235			

atg agc cag gag gaa gag gaa ctc atg agg aag agg ctc tgg aaa	6759
Met Ser Gln Glu Glu Glu Glu Leu Met Arg Lys Arg Leu Trp Lys	
2240 2245 2250	
ctt gtg aac aac cac acg ttc ttc cag cat cca gac tta atc aga	6804
Leu Val Asn Asn His Thr Phe Phe Gln His Pro Asp Leu Ile Arg	
2255 2260 2265	
gtg ctc cgc gtg cac gag aac gtg atg gcg gtg atg atg aac acg	6849
Val Leu Arg Val His Glu Asn Val Met Ala Val Met Met Asn Thr	
2270 2275 2280	
ctc ggc cgc cgc gcg cag gcg cag tcc gac gca cag ccc tcc tcg	6894
Leu Gly Arg Arg Ala Gln Ala Gln Ser Asp Ala Gln Pro Ser Ser	
2285 2290 2295	
cag cct gtc gca gag gat aac aag gag aag gac aca tca cac gag	6939
Gln Pro Val Ala Glu Asp Asn Lys Glu Lys Asp Thr Ser His Glu	
2300 2305 2310	
atg gtg gta gct tgc tgc cgt ttc ctc tgc tac ttc tgc cgc acc	6984
Met Val Val Ala Cys Cys Arg Phe Leu Cys Tyr Phe Cys Arg Thr	
2315 2320 2325	
ggg aga cag aac cag aag gca atg ttc gac cac ttc gac ttc ctc	7029
Gly Arg Gln Asn Gln Lys Ala Met Phe Asp His Phe Asp Phe Leu	
2330 2335 2340	
ctg gag aac tcc aac atc ttg ctg tcc aga cct tcg ctg aga gga	7074
Leu Glu Asn Ser Asn Ile Leu Leu Ser Arg Pro Ser Leu Arg Gly	
2345 2350 2355	
tcc acg cct cta gac gtg gct tat tcc agt ctt atg gag aac act	7119
Ser Thr Pro Leu Asp Val Ala Tyr Ser Ser Leu Met Glu Asn Thr	
2360 2365 2370	
gaa ctg gcg ctg gct ttg aga gag cac tac ctg gag aag ata gca	7164
Glu Leu Ala Leu Ala Leu Arg Glu His Tyr Leu Glu Lys Ile Ala	
2375 2380 2385	
gta tac ctg tcc cgt tgt ggt ctg cag agc aac tcg gag ctg gtg	7209
Val Tyr Leu Ser Arg Cys Gly Leu Gln Ser Asn Ser Glu Leu Val	
2390 2395 2400	
gag aag ggg tac cct gac ctc ggc tgg gat ccg gtc gag ggg gag	7254
Glu Lys Gly Tyr Pro Asp Leu Gly Trp Asp Pro Val Glu Gly Glu	
2405 2410 2415	
cgg tat ctt gac ttc ctg agg ttc tgt gtt tgg gta aac ggc gaa	7299
Arg Tyr Leu Asp Phe Leu Arg Phe Cys Val Trp Val Asn Gly Glu	
2420 2425 2430	
agc gta gaa gaa aac gcg aat cta gtg atc cgt ctc ctg atc cgt	7344
Ser Val Glu Glu Asn Ala Asn Leu Val Ile Arg Leu Leu Ile Arg	
2435 2440 2445	
cgt ccg gag tgc ctc ggg ccg gcg ctg cgc ggc gag ggc gag ggc	7389
Arg Pro Glu Cys Leu Gly Pro Ala Leu Arg Gly Glu Gly Glu Gly	
2450 2455 2460	

ctg	ctg	aag	gct	atc	gtc	gac	gcc	aac	aag	atg	agc	gag	agg	atc	7434
Leu	Leu	Lys	Ala	Ile	Val	Asp	Ala	Asn	Lys	Met	Ser	Glu	Arg	Ile	
2465						2470					2475				
gcc	gac	agg	agg	aag	ctc	agg	gaa	atg	gag	cag	gaa	gga	gat	gtt	7479
Ala	Asp	Arg	Arg	Lys	Leu	Arg	Glu	Met	Glu	Gln	Glu	Gly	Asp	Val	
2480						2485					2490				
aac	ttc	agc	cac	cct	ctc	ccg	gag	tca	gat	gag	gat	gag	gac	tac	7524
Asn	Phe	Ser	His	Pro	Leu	Pro	Glu	Ser	Asp	Glu	Asp	Glu	Asp	Tyr	
2495						2500					2505				
ata	gac	acg	ggg	gcc	gcc	atc	ttg	aac	ttc	tac	tgt	aca	ttg	gta	7569
Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu	Val	
2510						2515					2520				
gat	ctg	ctc	gga	aga	tgt	gct	cct	gat	gct	ggc	gtt	att	gct	ctc	7614
Asp	Leu	Leu	Gly	Arg	Cys	Ala	Pro	Asp	Ala	Gly	Val	Ile	Ala	Leu	
2525						2530					2535				
ggc	aag	aac	gag	tct	ctc	cgt	gcc	cgc	gct	atc	ctg	cgg	tcg	ctg	7659
Gly	Lys	Asn	Glu	Ser	Leu	Arg	Ala	Arg	Ala	Ile	Leu	Arg	Ser	Leu	
2540						2545					2550				
gtg	ccg	ctg	gag	gac	ctg	cag	gga	gtg	ctg	agc	ctg	cgc	ttc	acg	7704
Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Arg	Phe	Thr	
2555						2560					2565				
ctc	aac	aac	cct	gct	gct	gga	gag	gaa	cga	ccc	aag	tct	gat	atg	7749
Leu	Asn	Asn	Pro	Ala	Ala	Gly	Glu	Glu	Arg	Pro	Lys	Ser	Asp	Met	
2570						2575					2580				
cca	tcg	ggt	ctg	atc	ccg	gga	cac	aag	cag	agc	gtg	gga	ctg	ttc	7794
Pro	Ser	Gly	Leu	Ile	Pro	Gly	His	Lys	Gln	Ser	Val	Gly	Leu	Phe	
2585						2590					2595				
ctg	gag	aga	gtg	tac	ggc	atc	gaa	act	cag	gag	ttg	ttc	tac	aaa	7839
Leu	Glu	Arg	Val	Tyr	Gly	Ile	Glu	Thr	Gln	Glu	Leu	Phe	Tyr	Lys	
2600						2605					2610				
ctg	ctg	gag	gaa	gcc	ttc	ctg	cct	gac	ctc	agg	gct	gcc	act	atg	7884
Leu	Leu	Glu	Glu	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Ala	Ala	Thr	Met	
2615						2620					2625				
ctg	gac	agg	aac	gac	ggc	tgc	gaa	tca	gac	atg	gcg	ctg	tcg	atg	7929
Leu	Asp	Arg	Asn	Asp	Gly	Cys	Glu	Ser	Asp	Met	Ala	Leu	Ser	Met	
2630						2635					2640				
aac	cgc	tac	atc	ggc	aac	tcg	atc	ctg	ccg	ctg	ctg	atc	aaa	cac	7974
Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys	His	
2645						2650					2655				
gct	tac	ttc	tac	aac	gaa	gct	gag	aac	tac	gcc	agt	tta	ttg	gat	8019
Ala	Tyr	Phe	Tyr	Asn	Glu	Ala	Glu	Asn	Tyr	Ala	Ser	Leu	Leu	Asp	
2660						2665					2670				
gcc	acg	cta	cat	act	gtt	tat	agg	tta	tcg	aag	aac	cgc	atg	tta	8064
Ala	Thr	Leu	His	Thr	Val	Tyr	Arg	Leu	Ser	Lys	Asn	Arg	Met	Leu	
2675						2680					2685				

acc aag ggt caa cgt gaa gcg gtg tca gac ttc cta gtg gcg ctt	8109
Thr Lys Gly Gln Arg Glu Ala Val Ser Asp Phe Leu Val Ala Leu	
2690 2695 2700	
act tca gcg atg cag ccc tct atg ttg ctc aag ctg ctc agg aaa	8154
Thr Ser Ala Met Gln Pro Ser Met Leu Leu Lys Leu Leu Arg Lys	
2705 2710 2715	
ttg acg gtc gac gtg tct aaa ctg tcc gag tat act act gtc gct	8199
Leu Thr Val Asp Val Ser Lys Leu Ser Glu Tyr Thr Thr Val Ala	
2720 2725 2730	
ctt agg ctg ctg acg ctg cac tac gag cgc tgc gcg aag tac tac	8244
Leu Arg Leu Leu Thr Leu His Tyr Glu Arg Cys Ala Lys Tyr Tyr	
2735 2740 2745	
ggc agc acg ggc gcg ggg cag ggc gcg ttc ggc gcg tcg tcg gac	8289
Gly Ser Thr Gly Ala Gly Gln Gly Ala Phe Gly Ala Ser Ser Asp	
2750 2755 2760	
gag gag aag cgc ctc acc atg atg ctc ttc tcc aac atc ttc gac	8334
Glu Glu Lys Arg Leu Thr Met Met Leu Phe Ser Asn Ile Phe Asp	
2765 2770 2775	
tcg ctc agc aag atg gac tac gag ccc gag ctc ttc ggg aag gcg	8379
Ser Leu Ser Lys Met Asp Tyr Glu Pro Glu Leu Phe Gly Lys Ala	
2780 2785 2790	
ctg ccc tgt ctt att gct ata gga tgc gct ctg cct cct gac tac	8424
Leu Pro Cys Leu Ile Ala Ile Gly Cys Ala Leu Pro Pro Asp Tyr	
2795 2800 2805	
tct ctc tca aag aac tat gat gat gag ttt tac ggc aaa gag caa	8469
Ser Leu Ser Lys Asn Tyr Asp Asp Glu Phe Tyr Gly Lys Glu Gln	
2810 2815 2820	
gct gca ggt gac cta gac aac ccc caa tac gac cct cag ccc ata	8514
Ala Ala Gly Asp Leu Asp Asn Pro Gln Tyr Asp Pro Gln Pro Ile	
2825 2830 2835	
aac acg tcc tca gta gca ttg aac aat gat ctc aac acg atc gta	8559
Asn Thr Ser Ser Val Ala Leu Asn Asn Asp Leu Asn Thr Ile Val	
2840 2845 2850	
cag aag ttc tcg gaa cat tac cac gat gcg tgg gct agt agg aag	8604
Gln Lys Phe Ser Glu His Tyr His Asp Ala Trp Ala Ser Arg Lys	
2855 2860 2865	
att gag aac ggc tgg gtg tat ggg gag ggc tgg tct gat agc cag	8649
Ile Glu Asn Gly Trp Val Tyr Gly Glu Gly Trp Ser Asp Ser Gln	
2870 2875 2880	
aag act cat cct agg ctg aag cct tat aat atg ctt aat gat tat	8694
Lys Thr His Pro Arg Leu Lys Pro Tyr Asn Met Leu Asn Asp Tyr	
2885 2890 2895	
gaa aaa gag cgt tac aag gag cca gta cgt gaa tct ctg aag gca	8739
Glu Lys Glu Arg Tyr Lys Glu Pro Val Arg Glu Ser Leu Lys Ala	
2900 2905 2910	

ctt cta gcc atc ggt tgg tct gta gaa cat tca gaa gta gac ata 8784 Leu Leu Ala Ile Gly Trp Ser Val Glu His Ser Glu Val Asp Ile 2915 2920 2925
ccg agt aac aac cga agc tcc atg aga agg cag tcc aag tcg gga 8829 Pro Ser Asn Asn Arg Ser Ser Met Arg Arg Gln Ser Lys Ser Gly 2930 2935 2940
ggc cgc cct ccc gaa att gtg cag aca gac tcg gcg act ccg ttc 8874 Gly Arg Pro Pro Glu Ile Val Gln Thr Asp Ser Ala Thr Pro Phe 2945 2950 2955
aac tac aac cct cac cca gtc gac atg acc aac ttg acg cta tcg 8919 Asn Tyr Asn Pro His Pro Val Asp Met Thr Asn Leu Thr Leu Ser 2960 2965 2970
agg gag atg cag aac atg gcg gag agg ctc gct gac aac gca cac 8964 Arg Glu Met Gln Asn Met Ala Glu Arg Leu Ala Asp Asn Ala His 2975 2980 2985
gac atc tgg gcg aag aag aag aag gaa gaa ctc gtt act aat gga 9009 Asp Ile Trp Ala Lys Lys Lys Lys Glu Glu Leu Val Thr Asn Gly 2990 2995 3000
ggt ggc atc cac ccc caa cta gta ccc tac gac ctc cta acg gac 9054 Gly Gly Ile His Pro Gln Leu Val Pro Tyr Asp Leu Leu Thr Asp 3005 3010 3015
aaa gaa aag aag aaa gat cga gaa cgt tct caa gag ttc ctc aaa 9099 Lys Glu Lys Lys Lys Asp Arg Glu Arg Ser Gln Glu Phe Leu Lys 3020 3025 3030
tac ctt caa tac caa ggg tac aag ctc cac cgg ccc agc aag gcg 9144 Tyr Leu Gln Tyr Gln Gly Tyr Lys Leu His Arg Pro Ser Lys Ala 3035 3040 3045
cca caa agt gat acg gaa caa acc act acg ggg gta gca ata gag 9189 Pro Gln Ser Asp Thr Glu Gln Thr Thr Thr Gly Val Ala Ile Glu 3050 3055 3060
ttg aga ttc gca tac tcg ctc ctc gag aaa ttg atc cag tac atc 9234 Leu Arg Phe Ala Tyr Ser Leu Leu Glu Lys Leu Ile Gln Tyr Ile 3065 3070 3075
gat agg gcc acc att aat atg aag ctt ttg aaa cct tcc act acg 9279 Asp Arg Ala Thr Ile Asn Met Lys Leu Leu Lys Pro Ser Thr Thr 3080 3085 3090
ttt agt agg aga agt agt ttt aag act agt acc agg gat att aag 9324 Phe Ser Arg Arg Ser Ser Phe Lys Thr Ser Thr Arg Asp Ile Lys 3095 3100 3105
ttc ttt tct aag gtg gtg ctg cct cta atg gag aag tat ttc tcg 9369 Phe Phe Ser Lys Val Val Leu Pro Leu Met Glu Lys Tyr Phe Ser 3110 3115 3120
acg cat cgt aac tac ttc ata gct gta gct acg gcg acg aat aat 9414 Thr His Arg Asn Tyr Phe Ile Ala Val Ala Thr Ala Thr Asn Asn 3125 3130 3135

gtt ggt gca gcc agc ctg aag gag aaa gag atg gta gct gct ctg	9459
Val Gly Ala Ala Ser Leu Lys Glu Lys Glu Met Val Ala Ala Leu	
3140 3145 3150	
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Phe Cys Lys Leu Ala Ser Leu Leu Arg Ser Arg Leu Ala Ala Phe	
3155 3160 3165	
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Gly Pro Asp Val Arg Ile Thr Val Arg Cys Leu Gln Val Leu Val	
3170 3175 3180	
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Lys Gly Ile Asp Ala Lys Ser Leu Val Lys Asn Cys Pro Glu Phe	
3185 3190 3195	
atc agg acc tcc atg ttg acc ttc ttc aac aat gtc gct gat gat	9639
Ile Arg Thr Ser Met Leu Thr Phe Phe Asn Asn Val Ala Asp Asp	
3200 3205 3210	
gta ggg cat acg atc atg aat ttg cag gat ggt aaa tac gca cac	9684
Val Gly His Thr Ile Met Asn Leu Gln Asp Gly Lys Tyr Ala His	
3215 3220 3225	
cta cga ggt acc cac ttg aag aca tcc acg tct ctc ggc tat atc	9729
Leu Arg Gly Thr His Leu Lys Thr Ser Thr Ser Leu Gly Tyr Ile	
3230 3235 3240	
aac gga gta ctg ctc ccc ata ctg aca gcc aaa ttc gac cat ctg	9774
Asn Gly Val Leu Leu Pro Ile Leu Thr Ala Lys Phe Asp His Leu	
3245 3250 3255	
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Ala Asn Cys Glu Tyr Gly Ala Asp Leu Leu Leu Asp Glu Ile Gln	
3260 3265 3270	
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Val Ala Ser Tyr Lys Met Leu Gly Ser Leu Tyr Ala Leu Gly Thr	
3275 3280 3285	
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Asp Ala Ser Leu Thr His Asp Arg Lys Tyr Leu Lys Thr Glu Ile	
3290 3295 3300	
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Glu Arg His Lys Pro Ala Leu Gly Ser Cys Leu Gly Ala Phe Ser	
3305 3310 3315	
tcg aca ttc cca gta gcg ttc ctg gag cct cac ttg aac aaa cac	9999
Ser Thr Phe Pro Val Ala Phe Leu Glu Pro His Leu Asn Lys His	
3320 3325 3330	
aac cag ttc tcc ttg ctg aac agg atc gct gac cat tct ttg gaa	10044
Asn Gln Phe Ser Leu Leu Asn Arg Ile Ala Asp His Ser Leu Glu	
3335 3340 3345	
gcc caa gac ata atg cag aaa atg gaa caa tgc atg ccg acg tta	10089
Ala Gln Asp Ile Met Gln Lys Met Glu Gln Cys Met Pro Thr Leu	
3350 3355 3360	

gag gcg atc tta ggc gag gtg gac caa ttc gtg gag tca gac aag	10134
Glu Ala Ile Leu Gly Glu Val Asp Gln Phe Val Glu Ser Asp Lys	
3365 3370 3375	
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Thr Tyr Asn Glu Ala Pro His Ile Ile Asp Val Val Leu Pro Leu	
3380 3385 3390	
ctc tgt tct tac ttg ccg ttc tgg tgg gca cag ggg cct gat aat	10224
Leu Cys Ser Tyr Leu Pro Phe Trp Trp Ala Gln Gly Pro Asp Asn	
3395 3400 3405	
gtt act cct act ggc gga aac cac gta aca atg gta aca gcg gaa	10269
Val Thr Pro Thr Gly Gly Asn His Val Thr Met Val Thr Ala Glu	
3410 3415 3420	
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His Met Asn Gln Leu Leu Lys Asn Val Leu Lys Leu Ile Lys Lys	
3425 3430 3435	
aac atc ggc aat gag aac gcg ccg tgg atg acc cgc ata gcc acc	10359
Asn Ile Gly Asn Glu Asn Ala Pro Trp Met Thr Arg Ile Ala Thr	
3440 3445 3450	
tac acc cag cag atc atc atc aac agc tcc gag gag ttg ctg agg	10404
Tyr Thr Gln Gln Ile Ile Ile Asn Ser Ser Glu Glu Leu Leu Arg	
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gat tcc ttc ctg ccg ctc gct gaa cgt gtt cgc aag cgc acg gac	10449
Asp Ser Phe Leu Pro Leu Ala Glu Arg Val Arg Lys Arg Thr Asp	
3470 3475 3480	
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Asn Met Phe His Lys Glu Glu Ser Leu Arg Gly Phe Ile Lys Ser	
3485 3490 3495	
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Ser Thr Asp Asp Thr Ser Gln Val Glu Ser Gln Ile Gln Glu Asp	
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Trp Gln Leu Leu Val Arg Asp Ile Tyr Ser Phe Tyr Pro Leu Leu	
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Ile Lys Tyr Val Asp Leu Gln Arg Asn His Trp Leu Arg Asn Asn	
3530 3535 3540	
gtt cca gag gcg gaa gag ctg tac aac cac gtg gcc gaa atc ttc	10674
Val Pro Glu Ala Glu Glu Leu Tyr Asn His Val Ala Glu Ile Phe	
3545 3550 3555	
aac ata tgg tcg aag agc cag tac ttc ttg aag gag gaa cag aac	10719
Asn Ile Trp Ser Lys Ser Gln Tyr Phe Leu Lys Glu Glu Gln Asn	
3560 3565 3570	
ttc atc tct gcc aac gag att gat aac atg gtg ctg att atg cca	10764
Phe Ile Ser Ala Asn Glu Ile Asp Asn Met Val Leu Ile Met Pro	
3575 3580 3585	



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Thr Ala Thr Arg Arg Val Thr Ala Val Thr Asp Gly Thr Pro Gln	
3590 3595 3600	
ggc ggt gga aag aaa aag aag aag cac cgt gat aag aaa cgc gac	10854
Gly Gly Gly Lys Lys Lys Lys Lys His Arg Asp Lys Lys Arg Asp	
3605 3610 3615	
aaa gac aag gaa gtc caa gcg tcc cta atg gta gct tgt ctg aag	10899
Lys Asp Lys Glu Val Gln Ala Ser Leu Met Val Ala Cys Leu Lys	
3620 3625 3630	
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Arg Leu Leu Pro Val Gly Leu Asn Leu Phe Ala Gly Arg Glu Gln	
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Glu Leu Val Gln His Cys Lys Asp Arg Phe Leu Lys Val Gly Thr	
3650 3655 3660	
ctc aag aaa atg tca gaa caa gat gtg gca gaa ttc gcg aag acc	11034
Leu Lys Lys Met Ser Glu Gln Asp Val Ala Glu Phe Ala Lys Thr	
3665 3670 3675	
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Gln Leu Thr Leu Pro Asp Lys Ile Asp Pro Ala Asp Glu Met Ser	
3680 3685 3690	
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Trp Gln His Tyr Leu Tyr Ser Lys Leu Gly Ser Lys Ser Lys Ser	
3695 3700 3705	
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Asn Ile Thr Val Glu Thr Ala Glu Asn Lys Ala Lys Ile Ile Asp	
3710 3715 3720	
gat act gtt gaa agg atc gtc gct atg agt aaa gtg ctt ttc gga	11214
Asp Thr Val Glu Arg Ile Val Ala Met Ser Lys Val Leu Phe Gly	
3725 3730 3735	
ttg cat atg atc gac cat ccc caa caa atg agt aag aac gtg tac	11259
Leu His Met Ile Asp His Pro Gln Gln Met Ser Lys Asn Val Tyr	
3740 3745 3750	
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Arg Ser Val Val Ser Ile Gln Arg Lys Arg Ala Val Ile Ala Cys	
3755 3760 3765	
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Phe Arg Gln Thr Ser Leu His Ser Leu Pro Arg His Arg Ala Cys	
3770 3775 3780	
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Asn Ile Phe Ala Arg Thr Tyr Tyr Glu Leu Trp Leu Glu Glu Glu	
3785 3790 3795	
aac att gga caa gaa gtt atg ata gaa gat ctt act caa tca ttc	11439
Asn Ile Gly Gln Glu Val Met Ile Glu Asp Leu Thr Gln Ser Phe	
3800 3805 3810	

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gcc atg act gag agg tcc ggc Ala Met Thr Glu Arg Ser Gly 3845	gct tta cag gag gat Ala Leu Gln Glu Asp 3850	ccc cta tac Pro Leu Tyr 3855	11574
atg tct tac gca cac atc ata Met Ser Tyr Ala His Ile Ile 3860	gcg aag tcc tgt gga Ala Lys Ser Cys Gly 3865	gaa gaa gag Glu Glu Glu 3870	11619
gaa gaa ggg ggc ggg gaa gaa Glu Glu Gly Gly Gly Glu Glu 3875	gag gaa ggg ggt gga Glu Glu Gly Gly Gly 3880	gaa gct gag Glu Ala Glu 3885	11664
gcc gag gac gaa ggc aga gcc Ala Glu Asp Glu Gly Arg Ala 3890	agt ata cac gaa caa Ser Ile His Glu Gln 3895	gag atg gag Glu Met Glu 3900	11709
aaa cag aag ctt cta ttc cac Lys Gln Lys Leu Leu Phe His 3905	caa gcg cga ctg gca Gln Ala Arg Leu Ala 3910	gac cgc ggt Asp Arg Gly 3915	11754
gtt gcc gag atg gtg ttg ctg Val Ala Glu Met Val Leu Leu 3920	cat atc tcc gcg tct His Ile Ser Ala Ser 3925	aaa ggc ctg Lys Gly Leu 3930	11799
ccc agc gag atg gtc atg aag Pro Ser Glu Met Val Met Lys 3935	aca tta cag ctc ggt Thr Leu Gln Leu Gly 3940	att agt ata Ile Ser Ile 3945	11844
ctg aga gga ggc aat att gat Leu Arg Gly Gly Asn Ile Asp 3950	ata cag atg ggt atg Ile Gln Met Gly Met 3955	ttg aac cac Leu Asn His 3960	11889
ttg aaa gac aag aaa gac gtg Leu Lys Asp Lys Lys Asp Val 3965	gga ttc ttc acg tcc Gly Phe Phe Thr Ser 3970	atc gcc ggc Ile Ala Gly 3975	11934
ctc atg aac tcc tgc tca gtg Leu Met Asn Ser Cys Ser Val 3980	ctc gat ctt gac gcc Leu Asp Leu Asp Ala 3985	ttc gag agg Phe Glu Arg 3990	11979
aac acc aaa gct gaa ggt ctg Asn Thr Lys Ala Glu Gly Leu 3995	ggc gtg ggt ctg gaa Gly Val Gly Leu Glu 4000	ggc gcc gca Gly Ala Ala 4005	12024
gga gag aag aac atg cat gac Gly Glu Lys Asn Met His Asp 4010	gcc gag ttc acc tgc Ala Glu Phe Thr Cys 4015	gca ctc ttt Ala Leu Phe 4020	12069
agg ttc att cag ctc acc tgt Arg Phe Ile Gln Leu Thr Cys 4025	gaa gga cac aac ttg Glu Gly His Asn Leu 4030	gac tgg cag Asp Trp Gln 4035	12114

aac tac Asn Tyr 4040	ctg cga act cag gcc Leu Arg Thr Gln Ala 4045	ggg aac acg acg aca Gly Asn Thr Thr Thr 4050	gtg aac gtg Val Asn Val	12159
gtc atc Val Ile 4055	tgc acc gtc gac tac Cys Thr Val Asp Tyr 4060	ctg ctg cgg ctg cag Leu Leu Arg Leu Gln 4065	gag tcc atc Glu Ser Ile	12204
atg gac Met Asp 4070	ttc tac tgg cac tac Phe Tyr Trp His Tyr 4075	tct agc aag gaa ctg Ser Ser Lys Glu Leu 4080	atc gac ccg Ile Asp Pro	12249
gcc ggc Ala Gly 4085	aaa gcg aat ttc ttc Lys Ala Asn Phe Phe 4090	aag gcc att ggc gtg Lys Ala Ile Gly Val 4095	gct tcc caa Ala Ser Gln	12294
gta ttc Val Phe 4100	aac acc ctc act gaa Asn Thr Leu Thr Glu 4105	gtc ata cag gga cct Val Ile Gln Gly Pro 4110	tgt act cag Cys Thr Gln	12339
aac cag Asn Gln 4115	cag gct tta gct cac Gln Ala Leu Ala His 4120	tct agg tta tgg gac Ser Arg Leu Trp Asp 4125	gct gtc ggt Ala Val Gly	12384
ggg ttc Gly Phe 4130	ttg ttc cta ttc tcc Leu Phe Leu Phe Ser 4135	cac atg cag gac aag His Met Gln Asp Lys 4140	ttg tcg aag Leu Ser Lys	12429
cac tcg His Ser 4145	tcg cag gtg gac ctg Ser Gln Val Asp Leu 4150	ctg aag gaa ctc ctc Leu Lys Glu Leu Leu 4155	aat ctg cag Asn Leu Gln	12474
aag gac Lys Asp 4160	atg atc acc atg atg Met Ile Thr Met Met 4165	ctg tcc atg ctt gaa Leu Ser Met Leu Glu 4170	gga aat gtt Gly Asn Val	12519
gtt aat Val Asn 4175	ggg aca atc ggc aag Gly Thr Ile Gly Lys 4180	caa atg gtg gac act Gln Met Val Asp Thr 4185	cta gta gaa Leu Val Glu	12564
tcg gcc Ser Ala 4190	tcc aac gtg gaa ctg Ser Asn Val Glu Leu 4195	atc ctg aaa tac ttc Ile Leu Lys Tyr Phe 4200	gac atg ttc Asp Met Phe	12609
ctc aag Leu Lys 4205	ctg aag gac ctg act Leu Lys Asp Leu Thr 4210	tcc agc gcc agc ttc Ser Ser Ala Ser Phe 4215	caa gag ata Gln Glu Ile	12654
gat gcc Asp Ala 4220	aat aac gac ggc tgg Asn Asn Asp Gly Trp 4225	gtg ctg ccc aag gac Val Leu Pro Lys Asp 4230	ttc aag gag Phe Lys Glu	12699
aag atg Lys Met 4235	gaa caa cag aag agt Glu Gln Gln Lys Ser 4240	tat act ccc gaa gaa Tyr Thr Pro Glu Glu 4245	atc gag ttc Ile Glu Phe	12744
ctc tta Leu Leu 4250	gct tgc tgc gag acg Ala Cys Cys Glu Thr 4255	aac cac gac ggc aag Asn His Asp Gly Lys 4260	tta gac tac Leu Asp Tyr	12789

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tcc aac ata aag gcg aaa atc gca gac atg caa caa atg cca cca Ser Asn Ile Lys Ala Lys Ile Ala Asp Met Gln Gln Met Pro Pro 4445 4450 4455	13374
gcc gaa cta gca gtg ggc ttt ttc aaa atg ttc ttc tat cta ttc Ala Glu Leu Ala Val Gly Phe Phe Lys Met Phe Phe Tyr Leu Phe 4460 4465 4470	13419
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4490 4495 4500	
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Pro Pro Glu Pro Thr Glu Glu Glu Lys Ile Gly Gln Leu Arg His	
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Val Ser Pro Asp Glu Ser Ala Asp His Thr Glu Glu Gln Arg Pro	
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Pro Ser Leu Ile Asp Leu Leu Gly Gly Glu Gln Ala Lys Lys Gln	
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4655 4660 4665	
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4670 4675 4680	
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Lys Val Ser Thr Leu Asp Gly Glu Gly Gly Glu Gly Ser Gly Leu	
4685 4690 4695	
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Gly Asp Ile Ile Ala Gly Gly Gly Ser Gly Ser Gly Ala Gly Ser	
4700 4705 4710	

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tta gaa gta gta cac ata gac gaa gac ttc ttc tat atg gaa cac 14229 Leu Glu Val Val His Ile Asp Glu Asp Phe Phe Tyr Met Glu His 4730 4735 4740
gtc atc aaa atg gcg gcc gtg ttg cac tct atc gtg tct ctg gct 14274 Val Ile Lys Met Ala Ala Val Leu His Ser Ile Val Ser Leu Ala 4745 4750 4755
ata ctc atc gga tat tat cat ctt aag gtg ccg cta gct atc ttc 14319 Ile Leu Ile Gly Tyr Tyr His Leu Lys Val Pro Leu Ala Ile Phe 4760 4765 4770
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gac aaa ctc gtt ata tct gcc aaa tca ttc ccc gta aac tac tgg 14454 Asp Lys Leu Val Ile Ser Ala Lys Ser Phe Pro Val Asn Tyr Trp 4805 4810 4815
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tat gac ttc gac tcc atc tcc aac atg ttg ggc atg gag aag act 14544 Tyr Asp Phe Asp Ser Ile Ser Asn Met Leu Gly Met Glu Lys Thr 4835 4840 4845
tcc ttc tcc gcg caa gaa gaa gaa ggc agc aaa gga ctt att cat 14589 Ser Phe Ser Ala Gln Glu Glu Glu Gly Ser Lys Gly Leu Ile His 4850 4855 4860
tac ata atc aac ata gac tgg cgc tac caa gtg tgg aag gcg ggc 14634 Tyr Ile Ile Asn Ile Asp Trp Arg Tyr Gln Val Trp Lys Ala Gly 4865 4870 4875
gtg acg atc aca gac aac tcg ttc ctc tac tct cta tgg tac ttc 14679 Val Thr Ile Thr Asp Asn Ser Phe Leu Tyr Ser Leu Trp Tyr Phe 4880 4885 4890
tcc ttc tcc gtg atg ggg aac ttc aac aac ttc ttc ttc gcc gca 14724 Ser Phe Ser Val Met Gly Asn Phe Asn Asn Phe Phe Phe Ala Ala 4895 4900 4905
cat ttg ttg gac gtg gct gtt ggg ttt aag acc ctg agg act atc 14769 His Leu Leu Asp Val Ala Val Gly Phe Lys Thr Leu Arg Thr Ile 4910 4915 4920
ttg cag tct gtc acg cat aat gga aaa cag ctg gta tta acg gtg 14814 Leu Gln Ser Val Thr His Asn Gly Lys Gln Leu Val Leu Thr Val 4925 4930 4935

atg ctg ctg act ata atc gtg tac atc tac acg gtg atc gcg ttc	14859
Met Leu Leu Thr Ile Ile Val Tyr Ile Tyr Thr Val Ile Ala Phe	
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aac ttc ttc cgc aag ttc tac gtg cag gag gag gac gac gaa gtc	14904
Asn Phe Phe Arg Lys Phe Tyr Val Gln Glu Glu Asp Asp Glu Val	
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aat agg aac tgc cat gat atg ttg acg tgc ttc gtg ttc aac ttg	14949
Asn Arg Asn Cys His Asp Met Leu Thr Cys Phe Val Phe Asn Leu	
4970 4975 4980	
tac aag ggc gtg cgg gcg ggc ggc ggc atc ggc gac gag ctg gag	14994
Tyr Lys Gly Val Arg Ala Gly Gly Gly Ile Gly Asp Glu Leu Glu	
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ccg cct gat gga gac gac tcc gag gtc tac cgc atc atc ttc gac	15039
Pro Pro Asp Gly Asp Asp Ser Glu Val Tyr Arg Ile Ile Phe Asp	
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Ile Ser Phe Phe Phe Phe Ile Ile Val Ile Leu Leu Ala Ile Leu	
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cag ggt ttg atc atc gac gcg ttc gga gag ctg cgt gac cag ttg	15129
Gln Gly Leu Ile Ile Asp Ala Phe Gly Glu Leu Arg Asp Gln Leu	
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gag tcg gtg aag gag gac atg gag tcc aac tgc ttc atc tgc ggc	15174
Glu Ser Val Lys Glu Asp Met Glu Ser Asn Cys Phe Ile Cys Gly	
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atc aat aaa gac tat ttt gat aaa gtg ccg cac ggg ttc gac aca	15219
Ile Asn Lys Asp Tyr Phe Asp Lys Val Pro His Gly Phe Asp Thr	
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His Val Gln Arg Glu His Asn Leu Ala Asn Tyr Met Phe Phe Leu	
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atg cat ctc att aat aaa ccc gat acg gaa tat aca ggt caa gaa	15309
Met His Leu Ile Asn Lys Pro Asp Thr Glu Tyr Thr Gly Gln Glu	
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acc tac gta tgg aac atg tac aca caa aga tgt tgg gac ttc ttc	15354
Thr Tyr Val Trp Asn Met Tyr Thr Gln Arg Cys Trp Asp Phe Phe	
5105 5110 5115	
ccc gtg gga gat tgt ttc cga aag caa tac gaa gac ctc atg gga	15399
Pro Val Gly Asp Cys Phe Arg Lys Gln Tyr Glu Asp Leu Met Gly	
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gaa tag	15405
Glu	

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 <211> 5134  
 <212> PRT

<213> *Heliothis virescens*

&lt;220&gt;

&lt;223&gt; pXL-Hv2

&lt;400&gt; 130

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Leu Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu
20          25          30

Arg Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu
35          40          45

Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val
50          55          60

Phe Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val
65          70          75          80

Thr Ala Ala Gly Ser Glu Thr Gly Lys Gly Thr Gly Ser Gly His Arg
85          90          95

Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg His Leu Asn Ser Asp
100         105         110

Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser Gln Asp Lys Pro Ala
115         120         125

Phe Asp Val Gly Leu Gln Gln His Ser Gln Gly Glu Ala Cys Trp Trp
130         135         140

Thr Leu His Pro Ala Ser Lys Gln Arg Ser Glu Gly Glu Lys Val Arg
145         150         155         160

Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala Thr Glu Arg Tyr Leu
165         170         175

His Thr Thr Lys Glu Asn Glu Val Ser Ile Val Asn Ala Ser Phe His
180         185         190

Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr Gly Ile Ser Arg Met
195         200         205

Lys Tyr Val Gly Tyr Val Phe Gly Gly Asp Val Leu Arg Phe Phe His
210         215         220

Gly Gly Asp Glu Cys Leu Thr Ile Pro Ser Thr Trp Thr Lys Asp Gly
225         230         235         240

Gly Gln Asn Ile Val Val Tyr Glu Gly Gly Ser Val Met Ser Gln Ala
245         250         255

Arg Ser Leu Trp Arg Leu Glu Leu Ala Arg Thr Lys Trp Ala Gly Gly
260         265         270

Phe Ile Asn Trp Tyr His Pro Met Arg Ile Arg His Ile Thr Thr Gly
275         280         285

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Arg Tyr Leu Gly Val Asn Asp Gln Asn Glu Leu Tyr Leu Val Ser Arg  
 290 295 300  
 Glu Glu Ala Thr Thr Ala Ser Cys Ala Phe Cys Leu Arg Gln Glu Lys  
 305 310 315 320  
 Asp Asp Gln Lys Gln Val Leu Glu Asp Lys Asp Leu Glu Val Ile Gly  
 325 330 335  
 Ala Pro Ile Ile Lys Tyr Gly Asp Ser Thr Val Ile Val Gln His Ser  
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 Glu Thr Gly Leu Trp Leu Ser Tyr Lys Ser Tyr Glu Thr Lys Lys Glu  
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 Gly Val Gly Lys Val Glu Glu Lys Gln Ala Ile Leu His Glu Glu Gly  
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 Lys Met Asp Asp Gly Leu Asp Phe Ser Arg Ser Gln Glu Glu Glu Ser  
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 Arg Thr Ala Arg Val Ile Arg Lys Cys Ser Ser Leu Phe Thr Lys Phe  
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 Phe Ala Ser Val Asn Leu Gly Glu Met Val Met Cys Leu Glu Asp Leu  
 435 440 445  
 Ile Asn Tyr Phe Ala Gln Pro Asp Glu Asp Met Glu His Glu Glu Lys  
 450 455 460  
 Gln Asn Lys Phe Arg Ala Leu Arg Asn Arg Gln Asp Leu Phe Gln Glu  
 465 470 475 480  
 Glu Gly Ile Leu Asn Leu Ile Leu Glu Ala Ile Asp Lys Ile Asn Val  
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 Gly Gln Ser Trp Glu Met Ile Ser Gly Tyr Leu Tyr Gln Leu Leu Ala  
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 Ala Ile Ile Lys Gly Asn His Thr Asn Cys Ala Gln Phe Ala Asn Ser  
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 Asn Arg Leu Asn Trp Leu Phe Ser Arg Leu Gly Ser Gln Ala Ser Gly  
 545 550 555 560  
 Glu Gly Thr Gly Met Leu Asp Val Leu His Cys Val Leu Ile Asp Ser  
 565 570 575  
 Pro Glu Ala Leu Asn Met Met Arg Asp Glu His Ile Lys Val Ile Ile  
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 Ser Leu Leu Glu Lys His Gly Arg Asp Pro Lys Val Leu Asp Val Leu  
 595 600 605

Cys	Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	Arg	Ser	Ser	Gln	Asn	610	615	620
Asn	Ile	Cys	Asp	Tyr	Leu	Leu	Pro	Gly	Lys	Asn	Leu	Leu	Leu	Gln	Thr	625	630	635
Ala	Leu	Val	Asp	His	Val	Ser	Ser	Val	Arg	Pro	Asn	Ile	Phe	Val	Gly	645	650	655
Arg	Val	Glu	Gly	Ser	Ala	Val	Tyr	Arg	Lys	Trp	Tyr	Phe	Glu	Val	Thr	660	665	670
Met	Asp	His	Ile	Glu	Lys	Thr	Thr	His	Met	Ile	Pro	His	Leu	Arg	Ile	675	680	685
Gly	Trp	Ala	Asn	Thr	Thr	Gly	Tyr	Val	Pro	Tyr	Pro	Gly	Gly	Gly	Glu	690	695	700
Lys	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	Tyr	Ser	Tyr	Gly	Phe	705	710	715
Asp	Gly	Ala	Tyr	Leu	Trp	Ser	Gly	Gly	Arg	Lys	Thr	Pro	Val	Asn	Arg	725	730	735
Thr	His	Ala	Glu	Glu	Pro	Tyr	Ile	Arg	Lys	Gly	Asp	Val	Ile	Gly	Cys	740	745	750
Ala	Leu	Asp	Leu	Thr	Val	Pro	Ile	Ile	Asn	Phe	Met	Phe	Asn	Gly	Val	755	760	765
Arg	Val	Thr	Gly	Ser	Phe	Thr	Asn	Phe	Asn	Leu	Glu	Gly	Met	Phe	Phe	770	775	780
Pro	Val	Ile	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys	Arg	Phe	Leu	Leu	Gly	785	790	795
Gly	Glu	His	Gly	Arg	Leu	Arg	Tyr	Ala	Ala	Pro	Glu	Gly	Tyr	Ser	Pro	805	810	815
Leu	Val	Glu	Ser	Leu	Leu	Pro	Gln	Gln	Ile	Leu	Ser	Leu	Glu	Pro	Cys	820	825	830
Phe	Tyr	Phe	Gly	Asn	Leu	Ser	Lys	Arg	Ala	Leu	Ala	Gly	Pro	Pro	Leu	835	840	845
Val	Gln	Asp	Asp	Thr	Ala	Phe	Val	Pro	Thr	Pro	Val	Asp	Thr	Leu	Gln	850	855	860
Ile	Thr	Leu	Pro	Thr	Tyr	Val	Glu	Gln	Ile	Arg	Asp	Lys	Leu	Ala	Glu	865	870	875
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Tyr	Gly	Asp	Gln	Arg	Glu	Asp	Leu	His	Lys	Ile	His	Pro	Cys	Leu	Val	900	905	910
Pro	Phe	Glu	Arg	Leu	Pro	Pro	Ala	Glu	Lys	Arg	Tyr	Asp	Ile	Gln	Leu	915	920	925

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 Leu Asp Lys Pro Pro Ala Arg Ile Arg Asn Val Arg Leu Pro Asn Glu  
 945 950 955 960  
 Pro Phe Met Gln Ser Asn Gly Tyr Lys Pro Ala Pro Leu Asp Leu Ser  
 965 970 975  
 Ala Val Thr Leu Thr Pro Lys Met Asp Glu Leu Val Asp Gln Leu Ala  
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 Glu Asn Thr His Asn Leu Trp Ala Arg Glu Arg Ile Gln Gln Gly Trp  
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 Thr Tyr Gly Leu Asn Glu Asp Ser Asp Met His Arg Ser Pro His  
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 Thr Glu Ser Phe Gly Lys Gln Trp Ala Val Gly Asp Val Val Gly  
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 1175 1180 1185  
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 1190 1195 1200  
 Gly Gln Lys Ala Arg Leu Thr Tyr Gly Gln Asp Val Asn Thr Leu  
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 Lys Tyr Phe Thr Thr Cys Gly Leu Gln Glu Gly Tyr Glu Pro Phe  
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Arg	Gln	Gln	Ile	Leu	Met	Lys	Glu	Ala	Val	Glu	Ala	Gln	Met	Pro
1325						1330					1335			
Ala	His	Ile	Asp	Gln	Ile	Met	Arg	Ser	Gly	Phe	Thr	Met	Asn	Asp
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1355						1360					1365			
Ser	Lys	Met	Lys	Arg	Leu	Pro	Ser	Arg	Pro	Pro	Arg	Lys	Gly	Ser
1370						1375					1380			
Met	Thr	Arg	Gly	Val	Thr	Ile	Gln	Asn	Tyr	Asn	Asn	Leu	Gln	Pro
1385						1390					1395			
Gly	Gln	Val	Asn	Gly	Met	His	Arg	Ser	Thr	Ser	Glu	Ala	Glu	Met
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Ala	Lys	Tyr	Asp	Leu	Gly	Ala	Gln	Gly	Leu	Thr	Pro	Asp	Asp	Lys
1415						1420					1425			
Lys	Asp	Lys	Arg	Gly	Arg	Ser	Pro	Phe	Lys	Phe	Phe	Arg	Ser	Lys
1430						1435					1440			
Arg	Gly	Glu	Ser	Ser	Asp	Arg	Ala	Lys	Ser	Arg	Lys	Ser	Lys	Thr
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Pro	Asp	Pro	Phe	Ser	Asp	Thr	Glu	Val	Ser	Pro	Glu	Arg	Gly	Ala
1460						1465					1470			
Arg	Arg	Pro	Asn	Pro	Gln	Ile	Lys	Val	Ser	Gln	Ala	Asn	Gln	Arg
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Asp	Asp	Tyr	Asp	Arg	Val	Val	Glu	Asn	Val	Asn	Arg	Gln	Ser	Cys
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Glu	Met	Asp	Lys	Leu	Leu	Ser	Phe	His	Ser	His	Thr	Leu	Thr	Leu
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Cys	Lys	Asn	Glu	Phe	Val	Ile	Pro	Leu	Gly	Pro	Glu	Leu	Lys	Ala
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Thr	Glu	Ser	Val	Arg	Pro	Gln	Met	Lys	Met	Thr	Asp	Ile	Ala	Glu
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Glu	Val	Val	Arg	Glu	Phe	Val	Met	Gln	Ala	Leu	Ala	Glu	Ala	Val
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Glu	Thr	Asn	Gln	Val	His	Asn	Arg	Asp	Pro	Val	Gly	Gly	Ser	Asn
1925						1930					1935			
Glu	Asn	Leu	Phe	Leu	Pro	Leu	Ile	Lys	Leu	Val	Asp	Arg	Leu	Leu
1940						1945					1950			
Leu	Val	Gly	Met	Met	Arg	Asp	Glu	Asp	Val	Glu	Lys	Leu	Leu	Ile
1955						1960					1965			
Met	Thr	Asn	Pro	Glu	Thr	Trp	Asp	Pro	Ser	Phe	Asp	Lys	Glu	Gly
1970						1975					1980			
Lys	Asp	Glu	His	Arg	Lys	Gly	Leu	Leu	His	Met	Lys	Met	Ala	Glu
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Gly	Ala	Lys	Leu	Gln	Met	Cys	Tyr	Leu	Leu	Gln	His	Leu	Asn	Asp
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Ile	Gln	Leu	Arg	His	Arg	Val	Glu	Ala	Ile	Ile	Ala	Phe	Ala	His
2015						2020					2025			
Asp	Phe	Val	Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	Tyr	Thr
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Glu	Ile	Lys	Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	Lys	Lys
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Thr	Arg	Glu	Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	Ala	Ile
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Leu	Ser	Phe	Lys	His	Leu	Glu	Glu	Glu	Asp	Lys	Glu	Asn	Cys	Pro
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Cys	Gly	Glu	Glu	Leu	Ile	Ala	Arg	Met	Asn	Glu	Phe	His	Asp	Thr
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Ala	Glu	Asn	Gln	Glu	Pro	Glu	Ala	Lys	Pro	Gly	Ala	Phe	Gly	Lys
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Leu Tyr	Asn Ile Ile Asn Thr	Val Lys Glu Leu Glu	Glu Glu Ala
2135	2140	2145	
Lys Ala	Ile Glu Glu Pro Pro	Lys Lys Thr Pro Glu	Glu Lys Phe
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Arg Lys	Val Leu Ile Gln Thr	Ile Val Asn Trp Ala	Glu Glu Ser
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Gln Ile	Glu Thr Pro Lys Leu	Val Arg Glu Met Phe	Ser Leu Leu
2180	2185	2190	
Val Arg	Gln Tyr Asp Ala Val	Gly Glu Leu Ile Arg	Ala Leu Glu
2195	2200	2205	
Lys Thr	Tyr Val Ile Asn Ala	Lys Thr Lys Leu Asp	Val Ala Gly
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Met Trp	Val Gly Leu Ser Gln	Ile Arg Ala Leu Leu	Pro Val Gln
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Met Ser	Gln Glu Glu Glu Glu	Leu Met Arg Lys Arg	Leu Trp Lys
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Leu Val	Asn Asn His Thr Phe	Phe Gln His Pro Asp	Leu Ile Arg
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Val Leu	Arg Val His Glu Asn	Val Met Ala Val Met	Met Asn Thr
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Leu Gly	Arg Arg Ala Gln Ala	Gln Ser Asp Ala Gln	Pro Ser Ser
2285	2290	2295	
Gln Pro	Val Ala Glu Asp Asn	Lys Glu Lys Asp Thr	Ser His Glu
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Met Val	Val Ala Cys Cys Arg	Phe Leu Cys Tyr Phe	Cys Arg Thr
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Gly Arg	Gln Asn Gln Lys Ala	Met Phe Asp His Phe	Asp Phe Leu
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Leu Glu	Asn Ser Asn Ile Leu	Leu Ser Arg Pro Ser	Leu Arg Gly
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Ser Thr	Pro Leu Asp Val Ala	Tyr Ser Ser Leu Met	Glu Asn Thr
2360	2365	2370	
Glu Leu	Ala Leu Ala Leu Arg	Glu His Tyr Leu Glu	Lys Ile Ala
2375	2380	2385	
Val Tyr	Leu Ser Arg Cys Gly	Leu Gln Ser Asn Ser	Glu Leu Val
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Glu Lys	Gly Tyr Pro Asp Leu	Gly Trp Asp Pro Val	Glu Gly Glu
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Arg Tyr	Leu Asp Phe Leu Arg	Phe Cys Val Trp Val	Asn Gly Glu
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Ser	Val	Glu	Glu	Asn	Ala	Asn	Leu	Val	Ile	Arg	Leu	Leu	Ile	Arg
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Leu	Leu	Lys	Ala	Ile	Val	Asp	Ala	Asn	Lys	Met	Ser	Glu	Arg	Ile
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Asn	Phe	Ser	His	Pro	Leu	Pro	Glu	Ser	Asp	Glu	Asp	Glu	Asp	Tyr
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Ile	Asp	Thr	Gly	Ala	Ala	Ile	Leu	Asn	Phe	Tyr	Cys	Thr	Leu	Val
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	2525					2530					2535			
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	2540					2545					2550			
Val	Pro	Leu	Glu	Asp	Leu	Gln	Gly	Val	Leu	Ser	Leu	Arg	Phe	Thr
	2555					2560					2565			
Leu	Asn	Asn	Pro	Ala	Ala	Gly	Glu	Glu	Arg	Pro	Lys	Ser	Asp	Met
	2570					2575					2580			
Pro	Ser	Gly	Leu	Ile	Pro	Gly	His	Lys	Gln	Ser	Val	Gly	Leu	Phe
	2585					2590					2595			
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	2600					2605					2610			
Leu	Leu	Glu	Glu	Ala	Phe	Leu	Pro	Asp	Leu	Arg	Ala	Ala	Thr	Met
	2615					2620					2625			
Leu	Asp	Arg	Asn	Asp	Gly	Cys	Glu	Ser	Asp	Met	Ala	Leu	Ser	Met
	2630					2635					2640			
Asn	Arg	Tyr	Ile	Gly	Asn	Ser	Ile	Leu	Pro	Leu	Leu	Ile	Lys	His
	2645					2650					2655			
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	2675					2680					2685			
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Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr	Val	Ala
	2720					2725					2730			



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Gly Ser 2750	Thr Gly Ala Gly Gln 2755	Gly Ala Phe Gly Ala 2760	Ser Ser Asp
Glu Glu 2765	Lys Arg Leu Thr Met 2770	Met Leu Phe Ser Asn 2775	Ile Phe Asp
Ser Leu 2780	Ser Lys Met Asp Tyr 2785	Glu Pro Glu Leu Phe 2790	Gly Lys Ala
Leu Pro 2795	Cys Leu Ile Ala Ile 2800	Gly Cys Ala Leu Pro 2805	Pro Asp Tyr
Ser Leu 2810	Ser Lys Asn Tyr Asp 2815	Asp Glu Phe Tyr Gly 2820	Lys Glu Gln
Ala Ala 2825	Gly Asp Leu Asp Asn 2830	Pro Gln Tyr Asp Pro 2835	Gln Pro Ile
Asn Thr 2840	Ser Ser Val Ala Leu 2845	Asn Asn Asp Leu Asn 2850	Thr Ile Val
Gln Lys 2855	Phe Ser Glu His Tyr 2860	His Asp Ala Trp Ala 2865	Ser Arg Lys
Ile Glu 2870	Asn Gly Trp Val Tyr 2875	Gly Glu Gly Trp Ser 2880	Asp Ser Gln
Lys Thr 2885	His Pro Arg Leu Lys 2890	Pro Tyr Asn Met Leu 2895	Asn Asp Tyr
Glu Lys 2900	Glu Arg Tyr Lys Glu 2905	Pro Val Arg Glu Ser 2910	Leu Lys Ala
Leu Leu 2915	Ala Ile Gly Trp Ser 2920	Val Glu His Ser Glu 2925	Val Asp Ile
Pro Ser 2930	Asn Asn Arg Ser Ser 2935	Met Arg Arg Gln Ser 2940	Lys Ser Gly
Gly Arg 2945	Pro Pro Glu Ile Val 2950	Gln Thr Asp Ser Ala 2955	Thr Pro Phe
Asn Tyr 2960	Asn Pro His Pro Val 2965	Asp Met Thr Asn Leu 2970	Thr Leu Ser
Arg Glu 2975	Met Gln Asn Met Ala 2980	Glu Arg Leu Ala Asp 2985	Asn Ala His
Asp Ile 2990	Trp Ala Lys Lys Lys 2995	Lys Glu Glu Leu Val 3000	Thr Asn Gly
Gly Gly 3005	Ile His Pro Gln Leu 3010	Val Pro Tyr Asp Leu 3015	Leu Thr Asp
Lys Glu 3020	Lys Lys Lys Asp Arg 3025	Glu Arg Ser Gln Glu 3030	Phe Leu Lys

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Pro	Gln	Ser	Asp	Thr	Glu	Gln	Thr	Thr	Thr	Gly	Val	Ala	Ile	Glu
3050						3055					3060			
Leu	Arg	Phe	Ala	Tyr	Ser	Leu	Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Ile
3065						3070					3075			
Asp	Arg	Ala	Thr	Ile	Asn	Met	Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr
3080						3085					3090			
Phe	Ser	Arg	Arg	Ser	Ser	Phe	Lys	Thr	Ser	Thr	Arg	Asp	Ile	Lys
3095						3100					3105			
Phe	Phe	Ser	Lys	Val	Val	Leu	Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser
3110						3115					3120			
Thr	His	Arg	Asn	Tyr	Phe	Ile	Ala	Val	Ala	Thr	Ala	Thr	Asn	Asn
3125						3130					3135			
Val	Gly	Ala	Ala	Ser	Leu	Lys	Glu	Lys	Glu	Met	Val	Ala	Ala	Leu
3140						3145					3150			
Phe	Cys	Lys	Leu	Ala	Ser	Leu	Leu	Arg	Ser	Arg	Leu	Ala	Ala	Phe
3155						3160					3165			
Gly	Pro	Asp	Val	Arg	Ile	Thr	Val	Arg	Cys	Leu	Gln	Val	Leu	Val
3170						3175					3180			
Lys	Gly	Ile	Asp	Ala	Lys	Ser	Leu	Val	Lys	Asn	Cys	Pro	Glu	Phe
3185						3190					3195			
Ile	Arg	Thr	Ser	Met	Leu	Thr	Phe	Phe	Asn	Asn	Val	Ala	Asp	Asp
3200						3205					3210			
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Ser	Thr	Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro	His	Leu	Asn	Lys	His
3320						3325					3330			

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Ala Gln Asp Ile Met Gln Lys Met Glu Gln Cys Met Pro Thr Leu 3350 3355 3360
Glu Ala Ile Leu Gly Glu Val Asp Gln Phe Val Glu Ser Asp Lys 3365 3370 3375
Thr Tyr Asn Glu Ala Pro His Ile Ile Asp Val Val Leu Pro Leu 3380 3385 3390
Leu Cys Ser Tyr Leu Pro Phe Trp Trp Ala Gln Gly Pro Asp Asn 3395 3400 3405
Val Thr Pro Thr Gly Gly Asn His Val Thr Met Val Thr Ala Glu 3410 3415 3420
His Met Asn Gln Leu Leu Lys Asn Val Leu Lys Leu Ile Lys Lys 3425 3430 3435
Asn Ile Gly Asn Glu Asn Ala Pro Trp Met Thr Arg Ile Ala Thr 3440 3445 3450
Tyr Thr Gln Gln Ile Ile Ile Asn Ser Ser Glu Glu Leu Leu Arg 3455 3460 3465
Asp Ser Phe Leu Pro Leu Ala Glu Arg Val Arg Lys Arg Thr Asp 3470 3475 3480
Asn Met Phe His Lys Glu Glu Ser Leu Arg Gly Phe Ile Lys Ser 3485 3490 3495
Ser Thr Asp Asp Thr Ser Gln Val Glu Ser Gln Ile Gln Glu Asp 3500 3505 3510
Trp Gln Leu Leu Val Arg Asp Ile Tyr Ser Phe Tyr Pro Leu Leu 3515 3520 3525
Ile Lys Tyr Val Asp Leu Gln Arg Asn His Trp Leu Arg Asn Asn 3530 3535 3540
Val Pro Glu Ala Glu Glu Leu Tyr Asn His Val Ala Glu Ile Phe 3545 3550 3555
Asn Ile Trp Ser Lys Ser Gln Tyr Phe Leu Lys Glu Glu Gln Asn 3560 3565 3570
Phe Ile Ser Ala Asn Glu Ile Asp Asn Met Val Leu Ile Met Pro 3575 3580 3585
Thr Ala Thr Arg Arg Val Thr Ala Val Thr Asp Gly Thr Pro Gln 3590 3595 3600
Gly Gly Gly Lys Lys Lys Lys Lys His Arg Asp Lys Lys Arg Asp 3605 3610 3615
Lys Asp Lys Glu Val Gln Ala Ser Leu Met Val Ala Cys Leu Lys 3620 3625 3630

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Leu	Lys	Lys	Met	Ser	Glu	Gln	Asp	Val	Ala	Glu	Phe	Ala	Lys	Thr
3665						3670					3675			
Gln	Leu	Thr	Leu	Pro	Asp	Lys	Ile	Asp	Pro	Ala	Asp	Glu	Met	Ser
3680						3685					3690			
Trp	Gln	His	Tyr	Leu	Tyr	Ser	Lys	Leu	Gly	Ser	Lys	Ser	Lys	Ser
3695						3700					3705			
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3710						3715					3720			
Asp	Thr	Val	Glu	Arg	Ile	Val	Ala	Met	Ser	Lys	Val	Leu	Phe	Gly
3725						3730					3735			
Leu	His	Met	Ile	Asp	His	Pro	Gln	Gln	Met	Ser	Lys	Asn	Val	Tyr
3740						3745					3750			
Arg	Ser	Val	Val	Ser	Ile	Gln	Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys
3755						3760					3765			
Phe	Arg	Gln	Thr	Ser	Leu	His	Ser	Leu	Pro	Arg	His	Arg	Ala	Cys
3770						3775					3780			
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3785						3790					3795			
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Lys	Pro	Asp	Pro	Leu	Thr	Gln	Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly
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Met	Ser	Tyr	Ala	His	Ile	Ile	Ala	Lys	Ser	Cys	Gly	Glu	Glu	Glu
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3875						3880					3885			
Ala	Glu	Asp	Glu	Gly	Arg	Ala	Ser	Ile	His	Glu	Gln	Glu	Met	Glu
3890						3895					3900			
Lys	Gln	Lys	Leu	Leu	Phe	His	Gln	Ala	Arg	Leu	Ala	Asp	Arg	Gly
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Val	Ala	Glu	Met	Val	Leu	Leu	His	Ile	Ser	Ala	Ser	Lys	Gly	Leu
3920						3925					3930			

Pro	Ser	Glu	Met	Val	Met	Lys	Thr	Leu	Gln	Leu	Gly	Ile	Ser	Ile
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Val	Asn	Gly	Thr	Ile	Gly	Lys	Gln	Met	Val	Asp	Thr	Leu	Val	Glu
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Asp	Ala	Asn	Asn	Asp	Gly	Trp	Val	Leu	Pro	Lys	Asp	Phe	Lys	Glu
4220						4225					4230			

Lys	Met	Glu	Gln	Gln	Lys	Ser	Tyr	Thr	Pro	Glu	Glu	Ile	Glu	Phe
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Leu	Leu	Ala	Cys	Cys	Glu	Thr	Asn	His	Asp	Gly	Lys	Leu	Asp	Tyr
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Ile	Gly	Phe	Cys	Asp	Arg	Phe	His	Glu	Pro	Ala	Lys	Glu	Ile	Gly
4265						4270					4275			
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4325						4330					4335			
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 Leu Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu  
 20 25 30  
  
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 Arg Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu  
 35 40 45

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ggt tct ggt cat cgt acg cta cta tac ggc aat gct att ctt ttg cga Gly Ser Gly His Arg Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg 100 105 110	336
cat ctt aac agt gat atg tac ctg gcc tgc ctg tcg aca tca tca tcc His Leu Asn Ser Asp Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser 115 120 125	384
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gaa gcc tgc tgg tgg acc ctg cat cct gcc agc aaa cag aga tcc gag Glu Ala Cys Trp Trp Thr Leu His Pro Ala Ser Lys Gln Arg Ser Glu 145 150 155 160	480
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His Ile Thr Thr Gly Arg Tyr Leu Gly Val Asn Asp Gln Asn Glu Leu	
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Tyr Leu Val Ser Arg Glu Glu Ala Thr Thr Ala Ser Cys Ala Phe Cys	
305 310 315 320	
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325 330 335	
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Ile Val Gln His Ser Glu Thr Gly Leu Trp Leu Ser Tyr Lys Ser Tyr	
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Gln Glu Glu Glu Ser Arg Thr Ala Arg Val Ile Arg Lys Cys Ser Ser	
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Arg His Ser Met Phe Phe Ala Ser Val Asn Leu Gly Glu Met Val Met	
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Cys Leu Glu Asp Leu Ile Asn Tyr Phe Ala Gln Pro Asp Glu Asp Met	
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Asp Leu Phe Gln Glu Glu Gly Ile Leu Asn Leu Ile Leu Glu Ala Ile	
485 490 495	
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Val Lys Ile Asn Val Ile Thr Ser Gln Gly Phe Leu Ala Gly Phe Leu	
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Ala Gly Asp Glu Ser Gly Gln Ser Trp Glu Met Ile Ser Gly Tyr Leu	
515 520 525	

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Tyr	Gln	Leu	Leu	Ala	Ala	Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala	
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Gln	Phe	Ala	Asn	Ser	Asn	Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly	
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tcg	cag	gcc	tcg	ggc	gag	ggc	act	ggc	atg	ctc	gac	gtg	ctg	cac	tgc	1728
Ser	Gln	Ala	Ser	Gly	Glu	Gly	Thr	Gly	Met	Leu	Asp	Val	Leu	His	Cys	
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Val	Leu	Ile	Asp	Ser	Pro	Glu	Ala	Leu	Asn	Met	Met	Arg	Asp	Glu	His	
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Ile	Lys	Val	Ile	Ile	Ser	Leu	Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys	
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Val	Leu	Asp	Val	Leu	Cys	Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val	
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cgc	tcg	tca	cag	aac	aac	atc	tgt	gac	tat	ttg	ctg	ccc	ggc	aag	aac	1920
Arg	Ser	Ser	Gln	Asn	Asn	Ile	Cys	Asp	Tyr	Leu	Leu	Pro	Gly	Lys	Asn	
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Leu	Leu	Leu	Gln	Thr	Ala	Leu	Val	Asp	His	Val	Ser	Ser	Val	Arg	Pro	
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Asn	Ile	Phe	Val	Gly	Arg	Val	Glu	Gly	Ser	Ala	Val	Tyr	Arg	Lys	Trp	
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Tyr	Phe	Glu	Val	Thr	Met	Asp	His	Ile	Glu	Lys	Thr	Thr	His	Met	Met	
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cca	cat	cta	cgc	ata	gga	tgg	gct	aac	act	act	ggc	tac	gtc	cca	tac	2112
Pro	His	Leu	Arg	Ile	Gly	Trp	Ala	Asn	Thr	Thr	Gly	Tyr	Val	Pro	Tyr	
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Pro	Gly	Gly	Gly	Glu	Lys	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu	
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tac	tcg	tac	ggg	ttc	gac	ggc	gcc	tac	ctc	tgg	tcc	ggc	ggg	agg	aaa	2208
Tyr	Ser	Tyr	Gly	Phe	Asp	Gly	Ala	Tyr	Leu	Trp	Ser	Gly	Gly	Arg	Lys	
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act	ccc	gtc	aat	agg	act	cat	gct	gaa	gag	cct	tat	att	agg	aaa	ggg	2256
Thr	Pro	Val	Asn	Arg	Thr	His	Ala	Glu	Glu	Pro	Tyr	Ile	Arg	Lys	Gly	
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Asp	Val	Ile	Gly	Cys	Ala	Leu	Asp	Leu	Thr	Val	Pro	Ile	Ile	Asn	Phe	
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Met Phe Asn Gly Val Arg Val Thr Gly Ser Phe Thr Asn Phe Asn Leu	
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gaa ggc atg ttc ttc ccg gtc atc agc tgc tct agt aaa ttg agt tgc	2400
Glu Gly Met Phe Phe Pro Val Ile Ser Cys Ser Ser Lys Leu Ser Cys	
785 790 795 800	
cgg ttc ctg ctg ggc ggg gaa cat ggt aga ctc cgg cac gcg gct cca	2448
Arg Phe Leu Leu Gly Gly Glu His Gly Arg Leu Arg His Ala Ala Pro	
805 810 815	
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Glu Gly Tyr Ser Pro Leu Val Glu Ser Leu Leu Pro Gln Gln Ile Leu	
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Ser Leu Glu Pro Cys Phe Tyr Phe Gly Asn Leu Ser Lys Arg Ala Leu	
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Ala Gly Pro Pro Leu Val Gln Asp Asp Thr Ala Phe Val Pro Thr Pro	
850 855 860	
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Val Asp Thr Leu Gln Ile Thr Leu Pro Thr Tyr Val Glu Gln Ile Arg	
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gac aag cta gct gaa aat ata cac gaa atg tgg gct atg aat aag atc	2688
Asp Lys Leu Ala Glu Asn Ile His Glu Met Trp Ala Met Asn Lys Ile	
885 890 895	
gaa gca ggc tgg atg tac ggc gat cag aga gaa gac ttg cac aag atc	2736
Glu Ala Gly Trp Met Tyr Gly Asp Gln Arg Glu Asp Leu His Lys Ile	
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His Pro Cys Leu Val Pro Phe Glu Arg Leu Pro Pro Ala Glu Lys Arg	
915 920 925	
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Tyr Asp Ile Gln Leu Ala Val Gln Thr Leu Lys Thr Ile Leu Ala Leu	
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ggc tac tac atc agc tta gat aag cct cca gca cgc atc cgc aac gtt	2880
Gly Tyr Tyr Ile Ser Leu Asp Lys Pro Pro Ala Arg Ile Arg Asn Val	
945 950 955 960	
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Arg Leu Pro Asn Glu Pro Phe Met Gln Ser Asn Gly Tyr Lys Pro Ala	
965 970 975	
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Pro Leu Asp Leu Gly Ala Val Thr Leu Thr Pro Lys Met Asp Glu Leu	
980 985 990	
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Val Asp Gln Leu Ala Glu Asn Thr His Asn Leu Trp Ala Arg Glu Arg	
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Ile	Lys	Lys	Ala	Asn	Arg	Asp	Thr	Ala	Ser	Glu	Thr	Val	Arg	Thr	
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Leu	Leu	Val	Tyr	Gly	Tyr	Met	Leu	Asp	Pro	Pro	Thr	Gly	Glu	Gln	
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His	Glu	Ala	Leu	Leu	Leu	Glu	Ala	Ser	Lys	Gln	Lys	Gln	Ala	Asp	
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Phe	Arg	Thr	Tyr	Arg	Ala	Glu	Lys	Asn	Tyr	Ala	Val	Ser	Ser	Gly	
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Lys	Trp	Tyr	Phe	Glu	Phe	Glu	Ile	Leu	Thr	Ala	Gly	Pro	Met	Arg	
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Gln	Asp	Glu	Asn	Ser	Trp	Ala	Phe	Asp	Gly	Tyr	Asn	Glu	Glu	Lys	
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Gly	Asp	Val	Val	Gly	Val	Phe	Leu	Asp	Leu	Ile	Asp	Lys	Thr	Ile	
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Cys	Thr	Leu	Gly	Val	Gly	Gln	Lys	Ala	Arg	Leu	Thr	Tyr	Gly	Gln	
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Asp	Val	Asn	Thr	Leu	Lys	Tyr	Phe	Thr	Thr	Cys	Gly	Leu	Gln	Glu	
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Gly Tyr	Glu Pro Phe Cys Val	Asn Met Glu Arg Asp	Val Thr His	
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Trp Tyr	Thr Lys Asp Gln Pro	Ile Phe Glu Asn Thr	Asp Glu Met	
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Ile Asp	Thr Arg Ile Asp Val	Thr Arg Ile Pro Ala	Gly Ser Asp	
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Thr Pro	Pro Cys Leu Lys Ile	Ser His Asn Thr Phe	Glu Thr Met	
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Cys His	Asn Glu Phe Ile Asp	Glu Ala Glu Lys Ala	Arg Arg Trp	
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Val Glu	Ile Lys Asp Arg Gln	Gln Ile Leu Met Lys	Glu Ala Val	
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Glu Ala	Gln Met Pro Ala His	Ile Asp Gln Ile Met	Arg Ser Gly	
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Phe Thr	Met Asn Asp Ile Lys	Gly Leu His Tyr Glu	Asp Asn Gln	
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Glu Glu	Leu Pro Ser Ser Lys	Met Lys Arg Leu Pro	Ser Arg Pro	
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Pro Arg	Lys, Gly Ser Met Thr	Arg Gly Val Thr Ile	Gln Asn Tyr	
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aat aat	ttg caa cca ggt caa	gtc aat ggc atg cac	cgg tcg acc	4239
Asn Asn	Leu Gln Pro Gly Gln	Val Asn Gly Met His	Arg Ser Thr	
1400	1405	1410		
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Ser Glu	Ala Glu Met Ala Lys	Tyr Asp Leu Gly Ala	Gln Gly Leu	
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Thr Pro	Asp Asp Lys Lys Asp	Lys Arg Gly Arg Ser	Pro Phe Lys	
1430	1435	1440		
ttc ttc	aga agc aag cgc ggc	gaa agc agt gat cgt	gcc aaa tcc	4374
Phe Phe	Arg Ser Lys Arg Gly	Glu Ser Ser Asp Arg	Ala Lys Ser	
1445	1450	1455		

cgt aaa	tcc aaa	act cca	gat ccc	ttc agc	gat acc	gag gta	tca	4419
Arg Lys	Ser Lys Thr	Pro Asp	Pro Phe	Ser Asp	Thr	Glu Val	Ser	
1460		1465			1470			
cca gaa	cgt ggt	gct cga	agg cct	aac cct	cag atc	aaa gtg	tca	4464
Pro Glu	Arg Gly Ala	Arg Arg	Pro Asn	Pro Gln	Ile	Lys Val	Ser	
1475		1480			1485			
cag gcc	aat caa	aga tat	aac ggc	atg aac	gcg cgt	cct agc	agg	4509
Gln Ala	Asn Gln Arg	Tyr Asn	Gly Met	Asn Ala	Arg	Pro Ser	Arg	
1490		1495			1500			
acc aac	ttg tat	ggg agc	caa gtt	ggt tta	aac tca	aac gct	cag	4554
Thr Asn	Leu Tyr Gly	Ser Gln	Val Gly	Leu Asn	Ser	Asn Ala	Gln	
1505		1510			1515			
atg gcg	acg ccc	acg caa	gac agg	aag cag	atg acg	acg agc	act	4599
Met Ala	Thr Pro Thr	Gln Asp	Arg Lys	Gln Met	Thr	Thr Ser	Thr	
1520		1525			1530			
ctc gcg	cag tcg	gct acg	gaa act	gtc ggc	aat gag	atc ttc	gat	4644
Leu Ala	Gln Ser Ala	Thr Glu	Thr Val	Gly Asn	Glu	Ile Phe	Asp	
1535		1540			1545			
gca gag	tgc ttg	aag ctc	atc aat	gag tac	ttt tat	gga gtc	agg	4689
Ala Glu	Cys Leu Lys	Leu Ile	Asn Glu	Tyr Phe	Tyr	Gly Val	Arg	
1550		1555			1560			
atc tac	cca ggt	cag gac	cca aca	cac gtg	tac atc	ggc tgg	gtg	4734
Ile Tyr	Pro Gly Gln	Asp Pro	Thr His	Val Tyr	Ile	Gly Trp	Val	
1565		1570			1575			
acc acc	cag tac	cac ttg	cac tct	aag gac	ttc aac	cag agc	aag	4779
Thr Thr	Gln Tyr His	Leu His	Ser Lys	Asp Phe	Asn	Gln Ser	Lys	
1580		1585			1590			
gtc acc	aag tcc	tct gtc	atc atc	act gat	gat tac	gat agg	gtt	4824
Val Thr	Lys Ser Ser	Val Ile	Ile Thr	Asp Asp	Tyr	Asp Arg	Val	
1595		1600			1605			
gtt gag	aac gta	aac cgg	cag tcc	tgc tac	atg gtg	cga gct	gac	4869
Val Glu	Asn Val Asn	Arg Gln	Ser Cys	Tyr Met	Val	Arg Ala	Asp	
1610		1615			1620			
gag cta	tac aac	gag gtg	atg gcg	gaa gcc	acg gcc	aag ggc	gcc	4914
Glu Leu	Tyr Asn Glu	Val Met	Ala Glu	Ala Thr	Ala	Lys Gly	Ala	
1625		1630			1635			
tcg cag	ggc atg	ttc atc	ggc tgc	tcc gtc	gac acc	tcc acc	ggc	4959
Ser Gln	Gly Met Phe	Ile Gly	Cys Ser	Val Asp	Thr	Ser Thr	Gly	
1640		1645			1650			
agc gtg	tcc ttc	acc tgc	gag ggg	aag gac	acc agc	ttc aag	ttc	5004
Ser Val	Ser Phe Thr	Cys Glu	Gly Lys	Asp Thr	Ser	Phe Lys	Phe	
1655		1660			1665			
aag atg	gaa cca	gaa aca	aaa ctg	ttc ccc	gcg atc	ttc gta	gaa	5049
Lys Met	Glu Pro Glu	Thr Lys	Leu Phe	Pro Ala	Ile	Phe Val	Glu	
1670		1675			1680			

gcg acc tcc aag gag atc ctg cag ata gag ctg ggc aga tca gcc Ala Thr Ser Lys Glu Ile Leu Gln Ile Glu Leu Gly Arg Ser Ala 1685 1690 1695	5094
acc agc ctt cca cta tca gcc gct gta cta cca acg agt gat aag Thr Ser Leu Pro Leu Ser Ala Ala Val Leu Pro Thr Ser Asp Lys 1700 1705 1710	5139
cat gtc ata cca cag ttc cca ccg agg ttg aag gtg cag tgc ttg His Val Ile Pro Gln Phe Pro Pro Arg Leu Lys Val Gln Cys Leu 1715 1720 1725	5184
aaa cca cat cag tgg gct agg gta ccg aac caa tcc cta caa gtc Lys Pro His Gln Trp Ala Arg Val Pro Asn Gln Ser Leu Gln Val 1730 1735 1740	5229
cac gct ctg aag ttg tcc gac atc cgc ggt tgg tcg atg ctg tgt His Ala Leu Lys Leu Ser Asp Ile Arg Gly Trp Ser Met Leu Cys 1745 1750 1755	5274
gaa gac gca gtg tct atg ctg gct ttg cac ata ccg gag gaa gat Glu Asp Ala Val Ser Met Leu Ala Leu His Ile Pro Glu Glu Asp 1760 1765 1770	5319
cgt tgc atg gac att ttg gag ctg ata gaa atg gac aaa ctt tta Arg Cys Met Asp Ile Leu Glu Leu Ile Glu Met Asp Lys Leu Leu 1775 1780 1785	5364
agt ttc cat tct cac acc ctc acg tta tac gct gct tta tgt tac Ser Phe His Ser His Thr Leu Thr Leu Tyr Ala Ala Leu Cys Tyr 1790 1795 1800	5409
cag agt aac tac agg gct gcc cac gct ctg tgc acg cac gtg gac Gln Ser Asn Tyr Arg Ala Ala His Ala Leu Cys Thr His Val Asp 1805 1810 1815	5454
cag aag cag ctg ctg tac gcg atc cag tcg cag tac atg tcg ggc Gln Lys Gln Leu Leu Tyr Ala Ile Gln Ser Gln Tyr Met Ser Gly 1820 1825 1830	5499
ccg ctg cgc caa ggc ttc tac gat ctt ctc ata gcg ctg cat ctc Pro Leu Arg Gln Gly Phe Tyr Asp Leu Leu Ile Ala Leu His Leu 1835 1840 1845	5544
gag tcg cat gcc acc acc atg gag gcg tgt aag aac gag ttc gtg Glu Ser His Ala Thr Thr Met Glu Ala Cys Lys Asn Glu Phe Val 1850 1855 1860	5589
atc ccg ctg ggc ccg gag ctg aag gcg ctg tac gag gag ccc gac Ile Pro Leu Gly Pro Glu Leu Lys Ala Leu Tyr Glu Glu Pro Asp 1865 1870 1875	5634
atg gga cac tcg ctg cgc tcg ctg cag acc gag agc gtg cgg ccg Met Gly His Ser Leu Arg Ser Leu Gln Thr Glu Ser Val Arg Pro 1880 1885 1890	5679
cag atg aag atg acc gat atc gct gaa agt ata acc gag atc agc Gln Met Lys Met Thr Asp Ile Ala Glu Ser Ile Thr Glu Ile Ser 1895 1900 1905	5724

aac cta	tac tcg	ccg tac	ttc	ccg ctg	gag gtg	gtg	cgc gag	ttc	5769
Asn Leu	Tyr Ser	Pro Tyr	Phe	Pro Leu	Glu Val	Val	Arg Glu	Phe	
1910			1915			1920			
gtg atg	cag gcg	ctg gct	gaa	gcc gtg	gag acc	aac	cag gtg	cac	5814
Val Met	Gln Ala	Leu Ala	Glu	Ala Val	Glu Thr	Asn	Gln Val	His	
1925			1930			1935			
aac cgg	gat cct	gtc ggg	ggg	agc aat	gag aac	ctg	ttc ctg	cct	5859
Asn Arg	Asp Pro	Val Gly	Gly	Ser Asn	Glu Asn	Leu	Phe Leu	Pro	
1940			1945			1950			
cta ata	aag ctg	gtg gac	cgt	ctt cta	cta gtc	ggc	atg atg	cgc	5904
Leu Ile	Lys Leu	Val Asp	Arg	Leu Leu	Leu Val	Gly	Met Met	Arg	
1955			1960			1965			
gac gag	gat gtg	gag aag	cta	ctc atc	atg acc	aac	cct gag	acg	5949
Asp Glu	Asp Val	Glu Lys	Leu	Leu Ile	Met Thr	Asn	Pro Glu	Thr	
1970			1975			1980			
tgg gac	ccc tcg	ttt gat	aaa	ggg ggt	aaa gac	gag	cac cgc	aaa	5994
Trp Asp	Pro Ser	Phe Asp	Lys	Gly Gly	Lys Asp	Glu	His Arg	Lys	
1985			1990			1995			
ggt cta	ctc cac	atg aaa	atg	gcg gaa	ggc gct	aag	ctg cag	atg	6039
Gly Leu	Leu His	Met Lys	Met	Ala Glu	Gly Ala	Lys	Leu Gln	Met	
2000			2005			2010			
tgt tac	tta ctg	caa cat	ctc	aac gac	ata cag	ctg	cgg cac	agg	6084
Cys Tyr	Leu Leu	Gln His	Leu	Asn Asp	Ile Gln	Leu	Arg His	Arg	
2015			2020			2025			
gtc gaa	gct atc	att gcg	ttt	gcg cat	gac ttc	gtc	ggt gat	cta	6129
Val Glu	Ala Ile	Ile Ala	Phe	Ala His	Asp Phe	Val	Gly Asp	Leu	
2030			2035			2040			
cag act	gat cag	ctc aga	cgt	tac acg	gaa atc	aag	cag tcg	gac	6174
Gln Thr	Asp Gln	Leu Arg	Arg	Tyr Thr	Glu Ile	Lys	Gln Ser	Asp	
2045			2050			2055			
ttg ccg	agc gcg	gtg gcc	gct	aag aag	acc agg	gag	ttc cgg	tgt	6219
Leu Pro	Ser Ala	Val Ala	Ala	Lys Lys	Thr Arg	Glu	Phe Arg	Cys	
2060			2065			2070			
ccg cct	aga gaa	cag atg	aac	gct ata	ttg agt	ttc	aag cac	tta	6264
Pro Pro	Arg Glu	Gln Met	Asn	Ala Ile	Leu Ser	Phe	Lys His	Leu	
2075			2080			2085			
gag gag	gag gac	aag gag	aac	tgt ccg	tgc ggc	gag	gag ctg	atc	6309
Glu Glu	Glu Asp	Lys Glu	Asn	Cys Pro	Cys Gly	Glu	Glu Leu	Ile	
2090			2095			2100			
gcg cgc	atg aac	gag ttc	cac	gac acc	ctc atg	gcg	cac gtc	tcg	6354
Ala Arg	Met Asn	Glu Phe	His	Asp Thr	Leu Met	Ala	His Val	Ser	
2105			2110			2115			
ctg cac	gcg ctg	cag gag	ccc	gat gcc	gcg gaa	aat	caa gaa	cct	6399
Leu His	Ala Leu	Gln Glu	Pro	Asp Ala	Ala Glu	Asn	Gln Glu	Pro	
2120			2125			2130			

gaa gca aaa ccg ggg gca ttc ggc aag cta tac aac att atc aat	6444
Glu Ala Lys Pro Gly Ala Phe Gly Lys Leu Tyr Asn Ile Ile Asn	
2135 2140 2145	
acg gtc aag gaa tta gaa gag gaa gct aag gca ata gaa gag cct	6489
Thr Val Lys Glu Leu Glu Glu Glu Ala Lys Ala Ile Glu Glu Pro	
2150 2155 2160	
ccg aag aag acg cct gag gag aag ttc cgt aag gtc ctc atc cag	6534
Pro Lys Lys Thr Pro Glu Glu Lys Phe Arg Lys Val Leu Ile Gln	
2165 2170 2175	
acc ata gtg aac tgg gct gag gag tgc cag ata gaa aca ccc aaa	6579
Thr Ile Val Asn Trp Ala Glu Glu Ser Gln Ile Glu Thr Pro Lys	
2180 2185 2190	
ctc gtc aga gaa atg ttc agc ctt ctt gtc cgc cag tac gac gca	6624
Leu Val Arg Glu Met Phe Ser Leu Leu Val Arg Gln Tyr Asp Ala	
2195 2200 2205	
gta ggc gag ctg atc cgc gct tta gag aag aca tac gtc atc aac	6669
Val Gly Glu Leu Ile Arg Ala Leu Glu Lys Thr Tyr Val Ile Asn	
2210 2215 2220	
gct aag acc aag ttg gat gtc gcg gag atg tgg gtg ggg ctc agc	6714
Ala Lys Thr Lys Leu Asp Val Ala Glu Met Trp Val Gly Leu Ser	
2225 2230 2235	
cag atc cga gcc ctc ctg ccg gtg cag atg agc cag gag gaa gag	6759
Gln Ile Arg Ala Leu Leu Pro Val Gln Met Ser Gln Glu Glu Glu	
2240 2245 2250	
gaa ctc atg agg aag agg ctc tgg aaa ctt gtg aac aac cac acg	6804
Glu Leu Met Arg Lys Arg Leu Trp Lys Leu Val Asn Asn His Thr	
2255 2260 2265	
ttc ttc cag cat cca gac tta atc aga gtg ctc cgc gtg cac gag	6849
Phe Phe Gln His Pro Asp Leu Ile Arg Val Leu Arg Val His Glu	
2270 2275 2280	
aac gtg atg gcg gtg atg atg aac acg ctc ggc cgc cgc gcg cag	6894
Asn Val Met Ala Val Met Met Asn Thr Leu Gly Arg Arg Ala Gln	
2285 2290 2295	
gcg cag tcc gac gca cag ccc tcc tgc cag cct gtc gca gag gat	6939
Ala Gln Ser Asp Ala Gln Pro Ser Ser Gln Pro Val Ala Glu Asp	
2300 2305 2310	
aac aag gag aag gac aca tca cac gag atg gtg gta gct tgc tgc	6984
Asn Lys Glu Lys Asp Thr Ser His Glu Met Val Val Ala Cys Cys	
2315 2320 2325	
cgt ttc ctc tgc tac ttc tgc cgc acc ggg aga cag aac cag aag	7029
Arg Phe Leu Cys Tyr Phe Cys Arg Thr Gly Arg Gln Asn Gln Lys	
2330 2335 2340	
gca atg ttc gac cac ttc gac ttc ctc ctg gag aac tcc aac atc	7074
Ala Met Phe Asp His Phe Asp Phe Leu Leu Glu Asn Ser Asn Ile	
2345 2350 2355	

ttg ctg	tcc aga cct tcg ctg	aga gga tcc acg cct	cta gac gtg	7119
Leu Leu	Ser Arg Pro Ser Leu	Arg Gly Ser Thr Pro	Leu Asp Val	
2360	2365	2370		
gct tat	tcc agt ctt atg gag	aac act gaa ctg gcg	ctg gct ttg	7164
Ala Tyr	Ser Ser Leu Met Glu	Asn Thr Glu Leu Ala	Leu Ala Leu	
2375	2380	2385		
aga gag	cac tac ctg gag aag	ata gca gta tac ctg	tcc cgt tgt	7209
Arg Glu	His Tyr Leu Glu Lys	Ile Ala Val Tyr Leu	Ser Arg Cys	
2390	2395	2400		
ggg ctg	cag agc aac tcg gag	ctg gtg gag aag ggg	tac cct gac	7254
Gly Leu	Gln Ser Asn Ser Glu	Leu Val Glu Lys Gly	Tyr Pro Asp	
2405	2410	2415		
ctc ggc	tgg gat ccg gtc gag	ggg gag cgg tat ctt	gac ttc ctg	7299
Leu Gly	Trp Asp Pro Val Glu	Gly Glu Arg Tyr Leu	Asp Phe Leu	
2420	2425	2430		
agg ttc	tgt gtt tgg gta aac	ggc gaa agc gta gaa	gaa aac gcg	7344
Arg Phe	Cys Val Trp Val Asn	Gly Glu Ser Val Glu	Glu Asn Ala	
2435	2440	2445		
aat cta	gtg atc cgt ctc ctg	atc cgt cgt ccg gag	tgc ctc ggg	7389
Asn Leu	Val Ile Arg Leu Leu	Ile Arg Arg Pro Glu	Cys Leu Gly	
2450	2455	2460		
ccg gcg	ctg cgc ggc gag ggc	gag ggc ctg ctg aag	gct atc gtc	7434
Pro Ala	Leu Arg Gly Glu Gly	Glu Gly Leu Leu Lys	Ala Ile Val	
2465	2470	2475		
gac gcc	aac aag atg agc gag	agg atc gcc gac agg	agg aag ctc	7479
Asp Ala	Asn Lys Met Ser Glu	Arg Ile Ala Asp Arg	Arg Lys Leu	
2480	2485	2490		
agg gaa	atg gag cag gaa gga	gat gtt aac ttc agc	cac cct ctc	7524
Arg Glu	Met Glu Gln Glu Gly	Asp Val Asn Phe Ser	His Pro Leu	
2495	2500	2505		
ccg gag	tca gat gag gat gag	gac tac ata gac acg	ggg gcc gcc	7569
Pro Glu	Ser Asp Glu Asp Glu	Asp Tyr Ile Asp Thr	Gly Ala Ala	
2510	2515	2520		
atc ttg	aac ttc tac tgt aca	ttg gta gat ctg ctc	gga aga tgt	7614
Ile Leu	Asn Phe Tyr Cys Thr	Leu Val Asp Leu Leu	Gly Arg Cys	
2525	2530	2535		
gct cct	gat gct ggc gtt att	gct ctc ggc aag aac	gag tct ctc	7659
Ala Pro	Asp Ala Gly Val Ile	Ala Leu Gly Lys Asn	Glu Ser Leu	
2540	2545	2550		
cgt gcc	cgc gct atc ctg cgg	tcg ctg gtg ccg ctg	gag gac ctg	7704
Arg Ala	Arg Ala Ile Leu Arg	Ser Leu Val Pro Leu	Glu Asp Leu	
2555	2560	2565		
cag gga	gtg ctg agc ctg cgc	ttc acg ctc aac aac	cct gct gct	7749
Gln Gly	Val Leu Ser Leu Arg	Phe Thr Leu Asn Asn	Pro Ala Ala	
2570	2575	2580		

gga gag	gaa cga ccc aag tct	gat atg cca tcg ggt	ctg atc ccg	7794
Gly Glu	Glu Arg Pro Lys Ser	Asp Met Pro Ser	Gly Leu Ile Pro	
2585	2590	2595		
gga cac	aag cag agc gtg gga	ctg ttc ctg gag aga	gtg tac ggc	7839
Gly His	Lys Gln Ser Val Gly	Leu Phe Leu Glu Arg	Val Tyr Gly	
2600	2605	2610		
atc gaa	act cag gag ttg ttc	tac aaa ctg ctg gag	gaa gcc ttc	7884
Ile Glu	Thr Gln Glu Leu Phe	Tyr Lys Leu Leu Glu	Glu Ala Phe	
2615	2620	2625		
ctg cct	gac ctc agg gct gcc	act atg ctg gac agg	aac gac ggc	7929
Leu Pro	Asp Leu Arg Ala Ala	Thr Met Leu Asp Arg	Asn Asp Gly	
2630	2635	2640		
tgc gaa	tca gac atg gcg ctg	tcg atg aac cgc tac	atc ggc aac	7974
Cys Glu	Ser Asp Met Ala Leu	Ser Met Asn Arg Tyr	Ile Gly Asn	
2645	2650	2655		
tcg atc	ctg ccg ctg ctg atc	aaa cac gct tac ttc	tac aac gaa	8019
Ser Ile	Leu Pro Leu Leu Ile	Lys His Ala Tyr Phe	Tyr Asn Glu	
2660	2665	2670		
gct gag	aac tac gcc agt tta	ttg gat gcc acg cta	cat act gtt	8064
Ala Glu	Asn Tyr Ala Ser Leu	Leu Asp Ala Thr Leu	His Thr Val	
2675	2680	2685		
tat agg	tta tcg aag aac cgc	atg tta acc aag ggt	caa cgt gaa	8109
Tyr Arg	Leu Ser Lys Asn Arg	Met Leu Thr Lys Gly	Gln Arg Glu	
2690	2695	2700		
gcg gtg	tca gac ttc cta gtg	gcg ctt act tca gcg	atg cag ccc	8154
Ala Val	Ser Asp Phe Leu Val	Ala Leu Thr Ser Ala	Met Gln Pro	
2705	2710	2715		
tct atg	ttg ctc aag ctg ctc	agg aaa ttg acg gtc	gac gtg tct	8199
Ser Met	Leu Leu Lys Leu Leu	Arg Lys Leu Thr Val	Asp Val Ser	
2720	2725	2730		
aaa ctg	tcc gag tat act act	gtc gct ctt agg ctg	ctg acg ctg	8244
Lys Leu	Ser Glu Tyr Thr Thr	Val Ala Leu Arg Leu	Leu Thr Leu	
2735	2740	2745		
cac tac	gag cgc tgc gcg aag	tac tac ggc agc acg	ggc gcg ggg	8289
His Tyr	Glu Arg Cys Ala Lys	Tyr Tyr Gly Ser Thr	Gly Ala Gly	
2750	2755	2760		
cag ggc	gcg ttc ggc gcg tcg	tcg gac gag gag aag	cgc ctc acc	8334
Gln Gly	Ala Phe Gly Ala Ser	Ser Asp Glu Glu Lys	Arg Leu Thr	
2765	2770	2775		
atg atg	ctc ttc tcc aac atc	ttc gac tcg ctc agc	aag atg gac	8379
Met Met	Leu Phe Ser Asn Ile	Phe Asp Ser Leu Ser	Lys Met Asp	
2780	2785	2790		
tac gag	ccc gag ctc ttc ggg	aag gcg ctg ccc tgt	ctt att gct	8424
Tyr Glu	Pro Glu Leu Phe Gly	Lys Ala Leu Pro Cys	Leu Ile Ala	
2795	2800	2805		

ata gga	tgc gct	ctg cct	cct gac	tac tct	ctc tca	aag aac	tat	8469
Ile Gly	Cys Ala	Leu Pro	Pro Asp	Tyr Ser	Leu Ser	Lys Asn	Tyr	
2810			2815		2820			
gat ggt	gag ttt	tac ggc	aaa gag	caa gct	gca ggt	gac cta	gac	8514
Asp Gly	Glu Phe	Tyr Gly	Lys Glu	Gln Ala	Ala Gly	Asp Leu	Asp	
2825			2830		2835			
aac ccc	caa tac	gac cct	cag ccc	ata aac	acg tcc	tca gta	gca	8559
Asn Pro	Gln Tyr	Asp Pro	Gln Pro	Ile Asn	Thr Ser	Ser Val	Ala	
2840			2845		2850			
ttg aac	aat gat	ctc aac	acg atc	gta cag	aag ttc	tcg gaa	cat	8604
Leu Asn	Asn Asp	Leu Asn	Thr Ile	Val Gln	Lys Phe	Ser Glu	His	
2855			2860		2865			
tac cac	gat gcg	tgg gct	agt agg	aag att	gag aac	ggc tgg	gtg	8649
Tyr His	Asp Ala	Trp Ala	Ser Arg	Lys Ile	Glu Asn	Gly Trp	Val	
2870			2875		2880			
tat ggg	gag ggc	tgg tct	gat agc	cag aag	act cat	cct agg	ctg	8694
Tyr Gly	Glu Gly	Trp Ser	Asp Ser	Gln Lys	Thr His	Pro Arg	Leu	
2885			2890		2895			
aag cct	tat aat	atg ctt	aat gat	tat gaa	aaa gag	cgt tac	aag	8739
Lys Pro	Tyr Asn	Met Leu	Asn Asp	Tyr Glu	Lys Glu	Arg Tyr	Lys	
2900			2905		2910			
gag cca	gta cgt	gaa tct	ctg aag	gca ctt	cta gcc	atc ggt	tgg	8784
Glu Pro	Val Arg	Glu Ser	Leu Lys	Ala Leu	Leu Ala	Ile Gly	Trp	
2915			2920		2925			
tct gta	gaa cat	tca gaa	gta gac	ata ccg	agt aac	aac cga	agc	8829
Ser Val	Glu His	Ser Glu	Val Asp	Ile Pro	Ser Asn	Asn Arg	Ser	
2930			2935		2940			
tcc atg	aga agg	cag tcc	aag tcg	gga ggc	cgc cct	ccc gaa	att	8874
Ser Met	Arg Arg	Gln Ser	Lys Ser	Gly Gly	Arg Pro	Pro Glu	Ile	
2945			2950		2955			
gtg aca	gac tcg	gcg act	ccg ttc	aac tac	aac cct	cac cca	gtc	8919
Val Thr	Asp Ser	Ala Thr	Pro Phe	Asn Tyr	Asn Pro	His Pro	Val	
2960			2965		2970			
gac atg	acc aac	ttg acg	cta tcg	agg gag	atg cag	aac atg	gcg	8964
Asp Met	Thr Asn	Leu Thr	Leu Ser	Arg Glu	Met Gln	Asn Met	Ala	
2975			2980		2985			
gag agg	ctc gct	gac aac	gca cac	gac atc	tgg gcg	aag aag	aag	9009
Glu Arg	Leu Ala	Asp Asn	Ala His	Asp Ile	Trp Ala	Lys Lys	Lys	
2990			2995		3000			
aag gaa	gaa ctc	gtt act	aat gga	ggt ggc	atc cac	ccc caa	cta	9054
Lys Glu	Glu Leu	Val Thr	Asn Gly	Gly Gly	Ile His	Pro Gln	Leu	
3005			3010		3015			
gta ccc	tac gac	ctc cta	acg gac	aaa gaa	aag aag	aaa gat	cga	9099
Val Pro	Tyr Asp	Leu Leu	Thr Asp	Lys Glu	Lys Lys	Lys Asp	Arg	
3020			3025		3030			



gaa cgt	tct caa gag ttc ctc	aaa tac ctt caa tac	caa ggg tac	9144
Glu Arg	Ser Gln Glu Phe Leu	Lys Tyr Leu Gln Tyr	Gln Gly Tyr	
3035	3040	3045		
aag ctc	cac cgg ccc agc aag	gcg cca caa agt gat	acg gaa caa	9189
Lys Leu	His Arg Pro Ser Lys	Ala Pro Gln Ser Asp	Thr Glu Gln	
3050	3055	3060		
acc act	acg ggg gta gca ata	gag ttg aga ttc gca	tac tcg ctc	9234
Thr Thr	Thr Gly Val Ala Ile	Glu Leu Arg Phe Ala	Tyr Ser Leu	
3065	3070	3075		
ctc gag	aaa ttg atc cag tac	atc gat agg gcc acc	att aat atg	9279
Leu Glu	Lys Leu Ile Gln Tyr	Ile Asp Arg Ala Thr	Ile Asn Met	
3080	3085	3090		
aag ctt	ttg aaa cct tcc act	acg ttt agt agg aga	agt agt ttt	9324
Lys Leu	Leu Lys Pro Ser Thr	Thr Phe Ser Arg Arg	Ser Ser Phe	
3095	3100	3105		
aag act	agt acc agg gat att	aag ttc ttt tct aag	gtg gtg ctg	9369
Lys Thr	Ser Thr Arg Asp Ile	Lys Phe Phe Ser Lys	Val Val Leu	
3110	3115	3120		
cct cta	atg gag aag tat ttc	tcg acg cat cgt aac	tac ttc ata	9414
Pro Leu	Met Glu Lys Tyr Phe	Ser Thr His Arg Asn	Tyr Phe Ile	
3125	3130	3135		
gct gta	gct acg gcg acg aat	aat gtt ggt gca gcc	agc ctg aag	9459
Ala Val	Ala Thr Ala Thr Asn	Asn Val Gly Ala Ala	Ser Leu Lys	
3140	3145	3150		
gag aaa	gag atg gta gct gct	ctg ttc tgt aag ctg	gct agc ttg	9504
Glu Lys	Glu Met Val Ala Ala	Leu Phe Cys Lys Leu	Ala Ser Leu	
3155	3160	3165		
ctt aga	tct aga ctc gca gct	ttc ggt cct gac gtc	cgc atc aca	9549
Leu Arg	Ser Arg Leu Ala Ala	Phe Gly Pro Asp Val	Arg Ile Thr	
3170	3175	3180		
gtc cgc	tgt ctc caa gtg ttg	gtg aag ggc atc gac	gcc aag tcc	9594
Val Arg	Cys Leu Gln Val Leu	Val Lys Gly Ile Asp	Ala Lys Ser	
3185	3190	3195		
tta gtg	aag aac tgc ccc gag	ttc atc agg acc tcc	atg ttg acc	9639
Leu Val	Lys Asn Cys Pro Glu	Phe Ile Arg Thr Ser	Met Leu Thr	
3200	3205	3210		
ttc ttc	aac aat gtc gct gat	gat gta ggg cat acg	atc atg aat	9684
Phe Phe	Asn Asn Val Ala Asp	Asp Val Gly His Thr	Ile Met Asn	
3215	3220	3225		
ttg cag	gat ggt aaa tac gca	cac cta cga ggt acc	cac ttg aag	9729
Leu Gln	Asp Gly Lys Tyr Ala	His Leu Arg Gly Thr	His Leu Lys	
3230	3235	3240		
aca tcc	acg tct ctc ggc tat	atc aac gga gta ctg	ctc ccc ata	9774
Thr Ser	Thr Ser Leu Gly Tyr	Ile Asn Gly Val Leu	Leu Pro Ile	
3245	3250	3255		

ctg aca gcc aaa ttc gac cat	ctg gct aac tgc gag	tac ggt gct	9819
Leu Thr Ala Lys Phe Asp His	Leu Ala Asn Cys Glu Tyr Gly Ala		
3260	3265	3270	
gat ccg ttg ttg gac gag ata	caa gtg gcg tca tac	aag atg ttg	9864
Asp Pro Leu Leu Asp Glu Ile	Gln Val Ala Ser Tyr Lys Met Leu		
3275	3280	3285	
ggc tcc ctg tac gcg ctc ggc	acg gac gct tcg ctc	aca cac gac	9909
Gly Ser Leu Tyr Ala Leu Gly Thr Asp Ala Ser Leu Thr His Asp			
3290	3295	3300	
aga aag tac ctc aag act gag	att gag aga cat aaa	cct gct ttg	9954
Arg Lys Tyr Leu Lys Thr Glu Ile Glu Arg His Lys Pro Ala Leu			
3305	3310	3315	
ggg tca tgt cta ggt gcg ttc	agt tcg aca ttc ccg	gta gcg ttc	9999
Gly Ser Cys Leu Gly Ala Phe Ser Ser Thr Phe Pro Val Ala Phe			
3320	3325	3330	
ctg gag cct cac ttg gac aaa	cac aac cag ttc tcc	ttg ctg aac	10044
Leu Glu Pro His Leu Asp Lys His Asn Gln Phe Ser Leu Leu Asn			
3335	3340	3345	
agg atc gct gac cat tct ttg	gaa gcc caa gac ata	atg cag aaa	10089
Arg Ile Ala Asp His Ser Leu Glu Ala Gln Asp Ile Met Gln Lys			
3350	3355	3360	
atg gaa caa tgc atg ccg acg	tta gag acg atc tta	ggc gag gtg	10134
Met Glu Gln Cys Met Pro Thr Leu Glu Thr Ile Leu Gly Glu Val			
3365	3370	3375	
gac caa ttc gtg gag tca gac	aag acg tac aac gaa	gcg ccg cat	10179
Asp Gln Phe Val Glu Ser Asp Lys Thr Tyr Asn Glu Ala Pro His			
3380	3385	3390	
atc atc gat gtg gtg ttg cct	tta ctc tgt tct tac	ttg ccg ttc	10224
Ile Ile Asp Val Val Leu Pro Leu Leu Cys Ser Tyr Leu Pro Phe			
3395	3400	3405	
tgg tgg gca cag ggg cct gat	aat gtt act cct act	ggc gga aac	10269
Trp Trp Ala Gln Gly Pro Asp Asn Val Thr Pro Thr Gly Gly Asn			
3410	3415	3420	
cac gta aca atg gta aca gcg	gaa cac atg aac cag	ctc ctc aag	10314
His Val Thr Met Val Thr Ala Glu His Met Asn Gln Leu Leu Lys			
3425	3430	3435	
aat gtt ctg aag ctc atc aaa	aag aac atc ggc aat	gag aac gcg	10359
Asn Val Leu Lys Leu Ile Lys Lys Asn Ile Gly Asn Glu Asn Ala			
3440	3445	3450	
ccg tgg atg acc cgc ata gcc	acc tac acc cag cag	atc atc atc	10404
Pro Trp Met Thr Arg Ile Ala Thr Tyr Thr Gln Gln Ile Ile Ile			
3455	3460	3465	
aac agc tcc gag gag ttg ctg	agg gat tcc ttc ctg	ccg ctc gct	10449
Asn Ser Ser Glu Glu Leu Leu Arg Asp Ser Phe Leu Pro Leu Ala			
3470	3475	3480	

gaa cgt	gtt cgc	aag cgc	acg	gac aat	atg ttc	cat	aag gag	gag	10494
Glu Arg	Val Arg	Lys Arg	Thr	Asp Asn	Met Phe	His	Lys Glu	Glu	
3485			3490			3495			
agc ttg	aga ggg	ttt att	aag	tgc tca	aca gac	gac	aca tct	caa	10539
Ser Leu	Arg Gly	Phe Ile	Lys	Ser Ser	Thr Asp	Asp	Thr Ser	Gln	
3500			3505			3510			
gta gag	tca cag	ata caa	gaa	gac tgg	cag ctg	ctg	gtc aga	gac	10584
Val Glu	Ser Gln	Ile Gln	Glu	Asp Trp	Gln Leu	Leu	Val Arg	Asp	
3515			3520			3525			
atc tac	tcc ttc	tac ccg	cta	ctc atc	aag tac	gtc	gac ctg	cag	10629
Ile Tyr	Ser Phe	Tyr Pro	Leu	Leu Ile	Lys Tyr	Val	Asp Leu	Gln	
3530			3535			3540			
agg aac	cac tgg	ctc agg	aac	aat gtt	cca gag	gcg	gaa gag	ctg	10674
Arg Asn	His Trp	Leu Arg	Asn	Asn Val	Pro Glu	Ala	Glu Glu	Leu	
3545			3550			3555			
tac aac	cac gtg	gcc gaa	atc	ttc aac	ata tgg	tgc	aag agc	cag	10719
Tyr Asn	His Val	Ala Glu	Ile	Phe Asn	Ile Trp	Ser	Lys Ser	Gln	
3560			3565			3570			
tac ttc	ttg aag	gag gaa	cag	aac ttc	atc tct	gcc	aac gag	att	10764
Tyr Phe	Leu Lys	Glu Glu	Gln	Asn Phe	Ile Ser	Ala	Asn Glu	Ile	
3575			3580			3585			
gat aac	atg gtg	ctg att	atg	cca aca	gca aca	aga	aga gtg	aca	10809
Asp Asn	Met Val	Leu Ile	Met	Pro Thr	Ala Thr	Arg	Arg Val	Thr	
3590			3595			3600			
gca gta	aca gat	ggt act	cct	caa ggc	ggt gga	aag	aaa aag	aag	10854
Ala Val	Thr Asp	Gly Thr	Pro	Gln Gly	Gly Gly	Lys	Lys Lys	Lys	
3605			3610			3615			
aag cac	cgt gat	aag aaa	cgc	gac aaa	gac aag	gaa	gtc caa	gcg	10899
Lys His	Arg Asp	Lys Lys	Arg	Asp Lys	Asp Lys	Glu	Val Gln	Ala	
3620			3625			3630			
tcc cta	atg gta	gct tgt	ctg	aag agg	ttg cta	cca	gtt ggc	ctt	10944
Ser Leu	Met Val	Ala Cys	Leu	Lys Arg	Leu Leu	Pro	Val Gly	Leu	
3635			3640			3645			
aac cta	ttc gct	ggc aga	gaa	caa gaa	ctg gtg	cag	cat tgt	aaa	10989
Asn Leu	Phe Ala	Gly Arg	Glu	Gln Glu	Leu Val	Gln	His Cys	Lys	
3650			3655			3660			
gac agg	ttc ctg	aag gta	ggg	acc ctc	aag aaa	atg	tca gaa	caa	11034
Asp Arg	Phe Leu	Lys Val	Gly	Thr Leu	Lys Lys	Met	Ser Glu	Gln	
3665			3670			3675			
gat gtg	gca gaa	ttc gcg	aag	acc cag	ctg aca	ctt	cca gat	aaa	11079
Asp Val	Ala Glu	Phe Ala	Lys	Thr Gln	Leu Thr	Leu	Pro Asp	Lys	
3680			3685			3690			
ata gat	ccg gca	gac gaa	atg	tct tgg	caa cat	tac	ttg tat	agc	11124
Ile Asp	Pro Ala	Asp Glu	Met	Ser Trp	Gln His	Tyr	Leu Tyr	Ser	
3695			3700			3705			

aag tta ggt tcg aag agt aag agc aat ata act gtg gaa act gct	11169
Lys Leu Gly Ser Lys Ser Lys Ser Asn Ile Thr Val Glu Thr Ala	
3710 3715 3720	
gaa aat aaa gcc aag att att gat gat act gtt gaa agg atc gtc	11214
Glu Asn Lys Ala Lys Ile Ile Asp Asp Thr Val Glu Arg Ile Val	
3725 3730 3735	
gct atg agt aaa gtg ctt ttc gga ttg cat atg atc gac cat ccc	11259
Ala Met Ser Lys Val Leu Phe Gly Leu His Met Ile Asp His Pro	
3740 3745 3750	
caa caa atg agt aag aac gtg tac cgg tcg gtg gtg tcc ata caa	11304
Gln Gln Met Ser Lys Asn Val Tyr Arg Ser Val Val Ser Ile Gln	
3755 3760 3765	
cgc aag cgc gcc gtc atc gcc tgc ttc cga caa act tcg cta cat	11349
Arg Lys Arg Ala Val Ile Ala Cys Phe Arg Gln Thr Ser Leu His	
3770 3775 3780	
tct ctg ccg aga cac cga gcg tgt aac atc ttc gct cgc acg tac	11394
Ser Leu Pro Arg His Arg Cys Asn Ile Phe Ala Arg Thr Tyr	
3785 3790 3795	
tac gag ctc tgg ttg gaa gag gag aac att gga caa gaa gtt atg	11439
Tyr Glu Leu Trp Leu Glu Glu Glu Asn Ile Gly Gln Glu Val Met	
3800 3805 3810	
ata gaa gat ctt act caa tca ttc gaa gac gca gaa ctg aag aag	11484
Ile Glu Asp Leu Thr Gln Ser Phe Glu Asp Ala Glu Leu Lys Lys	
3815 3820 3825	
agt gac gtg gtg gag gaa ggt gag aag ccc gac ccc ctc acg cag	11529
Ser Asp Val Val Glu Glu Gly Glu Lys Pro Asp Pro Leu Thr Gln	
3830 3835 3840	
ctg gtc acc acc ttc tgt cgc ggc gcc atg act gag agg tcc ggc	11574
Leu Val Thr Thr Phe Cys Arg Gly Ala Met Thr Glu Arg Ser Gly	
3845 3850 3855	
gct tta cag gag gat ccc cta tac atg tct tac gca cac atc ata	11619
Ala Leu Gln Glu Asp Pro Leu Tyr Met Ser Tyr Ala His Ile Ile	
3860 3865 3870	
gcg aag tcc tgt gga gaa gaa gag gaa gaa ggg ggc ggg gaa gaa	11664
Ala Lys Ser Cys Gly Glu Glu Glu Glu Glu Gly Gly Gly Glu Glu	
3875 3880 3885	
gag gaa ggg ggt gga gaa gct gag gcc gag gac gaa ggc aga gcc	11709
Glu Glu Gly Gly Gly Glu Ala Glu Ala Glu Asp Glu Gly Arg Ala	
3890 3895 3900	
agt ata cac gaa caa gag atg gag aaa cag aag ctt cta ttc cac	11754
Ser Ile His Glu Gln Glu Met Glu Lys Gln Lys Leu Leu Phe His	
3905 3910 3915	
caa gcg cga ctg gca gac cgc ggt gtt gcc gag atg gtg ttg ctg	11799
Gln Ala Arg Leu Ala Asp Arg Gly Val Ala Glu Met Val Leu Leu	
3920 3925 3930	

cat	atc	tcc	gcg	tct	aaa	ggc	ctg	ccc	agc	gag	atg	gtc	atg	aag	11844
His	Ile	Ser	Ala	Ser	Lys	Gly	Leu	Pro	Ser	Glu	Met	Val	Met	Lys	
	3935					3940					3945				
aca	tta	cag	ctc	ggc	att	agt	ata	ctg	aga	gga	ggc	aat	att	gat	11889
Thr	Leu	Gln	Leu	Gly	Ile	Ser	Ile	Leu	Arg	Gly	Gly	Asn	Ile	Asp	
	3950					3955					3960				
ata	cag	atg	ggc	atg	ttg	aac	cac	ttg	aaa	gac	aag	aaa	gac	gtg	11934
Ile	Gln	Met	Gly	Met	Leu	Asn	His	Leu	Lys	Asp	Lys	Lys	Asp	Val	
	3965					3970					3975				
gga	ttc	ttc	acg	tcc	atc	gcc	ggc	ctc	atg	aac	tcc	tgc	tca	gtg	11979
Gly	Phe	Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser	Val	
	3980					3985					3990				
ctc	gat	ctt	gac	gcc	ttc	gag	agg	aac	acc	aaa	gct	gaa	ggc	ctg	12024
Leu	Asp	Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly	Leu	
	3995					4000					4005				
ggc	gtg	ggc	ctg	gaa	ggc	gcc	gca	gga	gag	aag	aac	atg	cat	gac	12069
Gly	Val	Gly	Leu	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	Asp	
	4010					4015					4020				
gcc	gag	ttc	acc	tgc	gca	ctc	ttt	agg	ttc	att	cag	ctc	acc	tgt	12114
Ala	Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	Cys	
	4025					4030					4035				
gaa	gga	cac	aac	ttg	gac	tgg	cag	aac	tac	ctg	cga	act	cag	gcc	12159
Glu	Gly	His	Asn	Leu	Asp	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala	
	4040					4045					4050				
ggc	aac	acg	gcg	gca	gtg	aac	gtg	gtc	atc	tgc	acc	gtc	gac	tac	12204
Gly	Asn	Thr	Ala	Ala	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr	
	4055					4060					4065				
ctg	ctg	cgg	ctg	cag	gag	tcc	atc	atg	gac	ttc	tac	tgg	cac	tac	12249
Leu	Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr	
	4070					4075					4080				
tct	agc	aag	gaa	ctg	atc	gac	ccg	gcc	ggc	aag	gcg	aat	ttc	ttc	12294
Ser	Ser	Lys	Glu	Leu	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe	
	4085					4090					4095				
aag	gcc	att	ggc	gtg	gct	tcc	caa	gta	ttc	aac	acc	ctc	act	gaa	12339
Lys	Ala	Ile	Gly	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Thr	Glu	
	4100					4105					4110				
gtc	ata	cag	gga	cct	tgt	act	cag	aac	cag	cag	gct	tta	gct	cac	12384
Val	Ile	Gln	Gly	Pro	Cys	Thr	Gln	Asn	Gln	Gln	Ala	Leu	Ala	His	
	4115					4120					4125				
tct	agg	tta	tgg	gac	gct	gtc	ggc	ggc	ttc	ttg	ttc	cta	ttc	tcc	12429
Ser	Arg	Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser	
	4130					4135					4140				
cac	atg	cag	gac	aag	ttg	tcg	aag	cac	tcg	tcg	cag	gtg	gac	ctg	12474
His	Met	Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu	
	4145					4150					4155				

ctg	aag	gaa	ctc	ctc	aat	ctg	cag	aag	gac	atg	atc	acc	atg	atg	12519
Leu	Lys	Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Thr	Met	Met	
	4160					4165					4170				
ctg	tcc	atg	ctt	gaa	gga	aat	gtt	gtt	aat	ggg	aca	atc	ggc	aag	12564
Leu	Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys	
	4175					4180					4185				
caa	atg	gtg	gac	act	cta	gta	gaa	tcg	gcc	tcc	aac	gtg	gaa	ctg	12609
Gln	Met	Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	Leu	
	4190					4195					4200				
atc	ctg	aaa	tac	ttc	gac	atg	ttc	ctc	aag	ctg	aag	gac	ctg	act	12654
Ile	Leu	Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Lys	Asp	Leu	Thr	
	4205					4210					4215				
tcc	agc	gcc	agc	ttc	caa	gag	ata	gat	gcc	aat	aac	gac	ggc	tgg	12699
Ser	Ser	Ala	Ser	Phe	Gln	Glu	Ile	Asp	Ala	Asn	Asn	Asp	Gly	Trp	
	4220					4225					4230				
gtg	ctg	ccc	aag	gac	ttc	aag	gag	aag	atg	gaa	caa	cag	aag	agt	12744
Val	Leu	Pro	Lys	Asp	Phe	Lys	Glu	Lys	Met	Glu	Gln	Gln	Lys	Ser	
	4235					4240					4245				
tat	act	ccc	gaa	gaa	atc	gag	ttc	ctc	tta	gct	tgc	tgc	gag	acg	12789
Tyr	Thr	Pro	Glu	Glu	Ile	Glu	Phe	Leu	Leu	Ala	Cys	Cys	Glu	Thr	
	4250					4255					4260				
aac	cac	gac	ggc	aag	tta	gac	tac	atc	ggg	ttc	tgc	gac	cgt	ttc	12834
Asn	His	Asp	Gly	Lys	Leu	Asp	Tyr	Ile	Gly	Phe	Cys	Asp	Arg	Phe	
	4265					4270					4275				
cac	gag	cct	gcc	aag	gag	atc	ggg	ttt	aac	ttg	gcc	gtg	tta	ctg	12879
His	Glu	Pro	Ala	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu	
	4280					4285					4290				
act	aac	ttg	tct	gaa	cat	atg	ccg	aac	gag	cct	aga	ttg	gct	cgt	12924
Thr	Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala	Arg	
	4295					4300					4305				
ttc	ctg	gag	acg	gag	ggg	tca	gtc	ctg	aac	tac	ttc	gaa	cca	ttc	12969
Phe	Leu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	Glu	Pro	Phe	
	4310					4315					4320				
ctg	ggc	cgt	atc	gag	atc	atg	ggc	ggc	tct	aag	cgc	atc	gag	cga	13014
Leu	Gly	Arg	Ile	Glu	Ile	Met	Gly	Gly	Ser	Lys	Arg	Ile	Glu	Arg	
	4325					4330					4335				
gtc	tac	ttc	gag	atc	aag	gag	tct	aat	atc	gaa	cag	tgg	gag	aaa	13059
Val	Tyr	Phe	Glu	Ile	Lys	Glu	Ser	Asn	Ile	Glu	Gln	Trp	Glu	Lys	
	4340					4345					4350				
ccg	caa	att	aag	gaa	tcc	aaa	cgc	gag	ttc	ttc	tac	agc	ata	gta	13104
Pro	Gln	Ile	Lys	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile	Val	
	4355					4360					4365				
aca	gaa	ggg	ggg	gat	aaa	gag	aaa	tta	gaa	gct	ttc	gtg	aac	ttc	13149
Thr	Glu	Gly	Gly	Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn	Phe	
	4370					4375					4380				

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Cys Glu Asp Ala Ile Phe Glu Met Thr His Ala Ser Gly Leu Met	
4385 4390 4395	
gcg gcg tcg gag gag tcg gtg gga ggg acc aag aat aga gag gcc	13239
Ala Ala Ser Glu Glu Ser Val Gly Gly Thr Lys Asn Arg Glu Ala	
4400 4405 4410	
agc tat atg tat atg ggg gat gat gat gat gag aga gcc ggc aaa	13284
Ser Tyr Met Tyr Met Gly Asp Asp Asp Asp Glu Arg Ala Gly Lys	
4415 4420 4425	
gat cca ttc cgt cgc gga ctc cag tca gtg aaa gac ggc gtc gcc	13329
Asp Pro Phe Arg Arg Gly Leu Gln Ser Val Lys Asp Gly Val Ala	
4430 4435 4440	
acg gca ttt tct tcc tta tca cct tcc aac ata aag gcg aaa atc	13374
Thr Ala Phe Ser Ser Leu Ser Pro Ser Asn Ile Lys Ala Lys Ile	
4445 4450 4455	
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Ala Asp Met Gln Gln Met Pro Pro Ala Glu Leu Ala Val Gly Phe	
4460 4465 4470	
ttc aaa atg ttc ttc tat cta ttc tat tac ttg ggc tat gga gtt	13464
Phe Lys Met Phe Phe Tyr Leu Phe Tyr Tyr Leu Gly Tyr Gly Val	
4475 4480 4485	
ctc gtc gtt gtc agg tat ata ttc ggt gtg ctc ttg ggt ctg atg	13509
Leu Val Val Val Arg Tyr Ile Phe Gly Val Leu Leu Gly Leu Met	
4490 4495 4500	
cga ggt cct cag acg gat gaa ccg cct ccg gag ccg acg gaa gag	13554
Arg Gly Pro Gln Thr Asp Glu Pro Pro Pro Glu Pro Thr Glu Glu	
4505 4510 4515	
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Glu Lys Ile Gly Gln Leu Arg His Arg Leu Leu Ala Thr Gln Ser	
4520 4525 4530	
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Ser Arg His Leu Pro Ala Leu Pro Pro Ala Asp Asp Thr Gly Gln	
4535 4540 4545	
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Met Gln Val Ser Ala Phe Gly Leu Asp Ile Thr Lys Glu Gly Asn	
4550 4555 4560	
gga cag ata caa gta aag ccg cac gaa tca ccc agc aca tcc act	13734
Gly Gln Ile Gln Val Lys Pro His Glu Ser Pro Ser Thr Ser Thr	
4565 4570 4575	
cca tca tca ggc gag gag gcg gag gtg tca ccc gac gag agc gcc	13779
Pro Ser Ser Gly Glu Glu Ala Glu Val Ser Pro Asp Glu Ser Ala	
4580 4585 4590	
gac cac acg gag gag cag aga ccg cct tct ctt atc gac ctg ctc	13824
Asp His Thr Glu Glu Gln Arg Pro Pro Ser Leu Ile Asp Leu Leu	
4595 4600 4605	

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Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val
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Phe Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val
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Thr Ala Ala Gly Ser Glu Thr Gly Lys Glu Asn Leu Gly Lys Gly Thr
85 90 95

Gly Ser Gly His Arg Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg
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His Leu Asn Ser Asp Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser
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Gln Asp Lys Leu Ala Phe Asp Val Gly Leu Gln Gln His Ser Gln Gly
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Val	Gly	Glu	Leu	Ile	Arg	Ala	Leu	Glu	Lys	Thr	Tyr	Val	Ile	Asn
2210						2215					2220			
Ala	Lys	Thr	Lys	Leu	Asp	Val	Ala	Glu	Met	Trp	Val	Gly	Leu	Ser
2225						2230					2235			
Gln	Ile	Arg	Ala	Leu	Leu	Pro	Val	Gln	Met	Ser	Gln	Glu	Glu	Glu
2240						2245					2250			
Glu	Leu	Met	Arg	Lys	Arg	Leu	Trp	Lys	Leu	Val	Asn	Asn	His	Thr
2255						2260					2265			
Phe	Phe	Gln	His	Pro	Asp	Leu	Ile	Arg	Val	Leu	Arg	Val	His	Glu
2270						2275					2280			
Asn	Val	Met	Ala	Val	Met	Met	Asn	Thr	Leu	Gly	Arg	Arg	Ala	Gln
2285						2290					2295			

Ala Gln Ser Asp Ala Gln Pro	Ser Ser Gln Pro Val	Ala Glu Asp
2300	2305	2310
Asn Lys Glu Lys Asp Thr Ser	His Glu Met Val Val	Ala Cys Cys
2315	2320	2325
Arg Phe Leu Cys Tyr Phe Cys	Arg Thr Gly Arg Gln	Asn Gln Lys
2330	2335	2340
Ala Met Phe Asp His Phe Asp	Phe Leu Leu Glu Asn	Ser Asn Ile
2345	2350	2355
Leu Leu Ser Arg Pro Ser Leu	Arg Gly Ser Thr Pro	Leu Asp Val
2360	2365	2370
Ala Tyr Ser Ser Leu Met Glu	Asn Thr Glu Leu Ala	Leu Ala Leu
2375	2380	2385
Arg Glu His Tyr Leu Glu Lys	Ile Ala Val Tyr Leu	Ser Arg Cys
2390	2395	2400
Gly Leu Gln Ser Asn Ser Glu	Leu Val Glu Lys Gly	Tyr Pro Asp
2405	2410	2415
Leu Gly Trp Asp Pro Val Glu	Gly Glu Arg Tyr Leu	Asp Phe Leu
2420	2425	2430
Arg Phe Cys Val Trp Val Asn	Gly Glu Ser Val Glu	Glu Asn Ala
2435	2440	2445
Asn Leu Val Ile Arg Leu Leu	Ile Arg Arg Pro Glu	Cys Leu Gly
2450	2455	2460
Pro Ala Leu Arg Gly Glu Gly	Glu Gly Leu Leu Lys	Ala Ile Val
2465	2470	2475
Asp Ala Asn Lys Met Ser Glu	Arg Ile Ala Asp Arg	Arg Lys Leu
2480	2485	2490
Arg Glu Met Glu Gln Glu Gly	Asp Val Asn Phe Ser	His Pro Leu
2495	2500	2505
Pro Glu Ser Asp Glu Asp Glu	Asp Tyr Ile Asp Thr	Gly Ala Ala
2510	2515	2520
Ile Leu Asn Phe Tyr Cys Thr	Leu Val Asp Leu Leu	Gly Arg Cys
2525	2530	2535
Ala Pro Asp Ala Gly Val Ile	Ala Leu Gly Lys Asn	Glu Ser Leu
2540	2545	2550
Arg Ala Arg Ala Ile Leu Arg	Ser Leu Val Pro Leu	Glu Asp Leu
2555	2560	2565
Gln Gly Val Leu Ser Leu Arg	Phe Thr Leu Asn Asn	Pro Ala Ala
2570	2575	2580
Gly Glu Glu Arg Pro Lys Ser	Asp Met Pro Ser Gly	Leu Ile Pro
2585	2590	2595

Gly His	Lys Gln Ser Val	Gly Leu Phe Leu Glu Arg	Val Tyr Gly
2600		2605	2610
Ile Glu	Thr Gln Glu Leu Phe	Tyr Lys Leu Leu Glu	Glu Ala Phe
2615		2620	2625
Leu Pro	Asp Leu Arg Ala Ala	Thr Met Leu Asp Arg	Asn Asp Gly
2630		2635	2640
Cys Glu	Ser Asp Met Ala Leu	Ser Met Asn Arg Tyr	Ile Gly Asn
2645		2650	2655
Ser Ile	Leu Pro Leu Leu Ile	Lys His Ala Tyr Phe	Tyr Asn Glu
2660		2665	2670
Ala Glu	Asn Tyr Ala Ser Leu	Leu Asp Ala Thr Leu	His Thr Val
2675		2680	2685
Tyr Arg	Leu Ser Lys Asn Arg	Met Leu Thr Lys Gly	Gln Arg Glu
2690		2695	2700
Ala Val	Ser Asp Phe Leu Val	Ala Leu Thr Ser Ala	Met Gln Pro
2705		2710	2715
Ser Met	Leu Leu Lys Leu Leu	Arg Lys Leu Thr Val	Asp Val Ser
2720		2725	2730
Lys Leu	Ser Glu Tyr Thr Thr	Val Ala Leu Arg Leu	Leu Thr Leu
2735		2740	2745
His Tyr	Glu Arg Cys Ala Lys	Tyr Tyr Gly Ser Thr	Gly Ala Gly
2750		2755	2760
Gln Gly	Ala Phe Gly Ala Ser	Ser Asp Glu Glu Lys	Arg Leu Thr
2765		2770	2775
Met Met	Leu Phe Ser Asn Ile	Phe Asp Ser Leu Ser	Lys Met Asp
2780		2785	2790
Tyr Glu	Pro Glu Leu Phe Gly	Lys Ala Leu Pro Cys	Leu Ile Ala
2795		2800	2805
Ile Gly	Cys Ala Leu Pro Pro	Asp Tyr Ser Leu Ser	Lys Asn Tyr
2810		2815	2820
Asp Gly	Glu Phe Tyr Gly Lys	Glu Gln Ala Ala Gly	Asp Leu Asp
2825		2830	2835
Asn Pro	Gln Tyr Asp Pro Gln	Pro Ile Asn Thr Ser	Ser Val Ala
2840		2845	2850
Leu Asn	Asn Asp Leu Asn Thr	Ile Val Gln Lys Phe	Ser Glu His
2855		2860	2865
Tyr His	Asp Ala Trp Ala Ser	Arg Lys Ile Glu Asn	Gly Trp Val
2870		2875	2880
Tyr Gly	Glu Gly Trp Ser Asp	Ser Gln Lys Thr His	Pro Arg Leu
2885		2890	2895

Lys	Pro	Tyr	Asn	Met	Leu	Asn	Asp	Tyr	Glu	Lys	Glu	Arg	Tyr	Lys
2900						2905					2910			
Glu	Pro	Val	Arg	Glu	Ser	Leu	Lys	Ala	Leu	Leu	Ala	Ile	Gly	Trp
2915						2920					2925			
Ser	Val	Glu	His	Ser	Glu	Val	Asp	Ile	Pro	Ser	Asn	Asn	Arg	Ser
2930						2935					2940			
Ser	Met	Arg	Arg	Gln	Ser	Lys	Ser	Gly	Gly	Arg	Pro	Pro	Glu	Ile
2945						2950					2955			
Val	Thr	Asp	Ser	Ala	Thr	Pro	Phe	Asn	Tyr	Asn	Pro	His	Pro	Val
2960						2965					2970			
Asp	Met	Thr	Asn	Leu	Thr	Leu	Ser	Arg	Glu	Met	Gln	Asn	Met	Ala
2975						2980					2985			
Glu	Arg	Leu	Ala	Asp	Asn	Ala	His	Asp	Ile	Trp	Ala	Lys	Lys	Lys
2990						2995					3000			
Lys	Glu	Glu	Leu	Val	Thr	Asn	Gly	Gly	Gly	Ile	His	Pro	Gln	Leu
3005						3010					3015			
Val	Pro	Tyr	Asp	Leu	Leu	Thr	Asp	Lys	Glu	Lys	Lys	Lys	Asp	Arg
3020						3025					3030			
Glu	Arg	Ser	Gln	Glu	Phe	Leu	Lys	Tyr	Leu	Gln	Tyr	Gln	Gly	Tyr
3035						3040					3045			
Lys	Leu	His	Arg	Pro	Ser	Lys	Ala	Pro	Gln	Ser	Asp	Thr	Glu	Gln
3050						3055					3060			
Thr	Thr	Thr	Gly	Val	Ala	Ile	Glu	Leu	Arg	Phe	Ala	Tyr	Ser	Leu
3065						3070					3075			
Leu	Glu	Lys	Leu	Ile	Gln	Tyr	Ile	Asp	Arg	Ala	Thr	Ile	Asn	Met
3080						3085					3090			
Lys	Leu	Leu	Lys	Pro	Ser	Thr	Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe
3095						3100					3105			
Lys	Thr	Ser	Thr	Arg	Asp	Ile	Lys	Phe	Phe	Ser	Lys	Val	Val	Leu
3110						3115					3120			
Pro	Leu	Met	Glu	Lys	Tyr	Phe	Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile
3125						3130					3135			
Ala	Val	Ala	Thr	Ala	Thr	Asn	Asn	Val	Gly	Ala	Ala	Ser	Leu	Lys
3140						3145					3150			
Glu	Lys	Glu	Met	Val	Ala	Ala	Leu	Phe	Cys	Lys	Leu	Ala	Ser	Leu
3155						3160					3165			
Leu	Arg	Ser	Arg	Leu	Ala	Ala	Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr
3170						3175					3180			
Val	Arg	Cys	Leu	Gln	Val	Leu	Val	Lys	Gly	Ile	Asp	Ala	Lys	Ser
3185						3190					3195			

Leu Val	Lys Asn Cys Pro	Glu Phe Ile Arg Thr	Ser Met Leu Thr
3200		3205	3210
Phe Phe	Asn Asn Val Ala	Asp Val Gly His	Thr Ile Met Asn
3215		3220	3225
Leu Gln	Asp Gly Lys Tyr	Ala His Leu Arg Gly	Thr His Leu Lys
3230		3235	3240
Thr Ser	Thr Ser Leu Gly	Tyr Ile Asn Gly Val	Leu Leu Pro Ile
3245		3250	3255
Leu Thr	Ala Lys Phe Asp	His Leu Ala Asn Cys	Glu Tyr Gly Ala
3260		3265	3270
Asp Pro	Leu Leu Asp Glu	Ile Gln Val Ala Ser	Tyr Lys Met Leu
3275		3280	3285
Gly Ser	Leu Tyr Ala Leu	Gly Thr Asp Ala Ser	Leu Thr His Asp
3290		3295	3300
Arg Lys	Tyr Leu Lys Thr	Glu Ile Glu Arg His	Lys Pro Ala Leu
3305		3310	3315
Gly Ser	Cys Leu Gly Ala	Phe Ser Ser Thr Phe	Pro Val Ala Phe
3320		3325	3330
Leu Glu	Pro His Leu Asp	Lys His Asn Gln Phe	Ser Leu Leu Asn
3335		3340	3345
Arg Ile	Ala Asp His Ser	Leu Glu Ala Gln Asp	Ile Met Gln Lys
3350		3355	3360
Met Glu	Gln Cys Met Pro	Thr Leu Glu Thr Ile	Leu Gly Glu Val
3365		3370	3375
Asp Gln	Phe Val Glu Ser	Asp Lys Thr Tyr Asn	Glu Ala Pro His
3380		3385	3390
Ile Ile	Asp Val Val Leu	Pro Leu Leu Cys Ser	Tyr Leu Pro Phe
3395		3400	3405
Trp Trp	Ala Gln Gly Pro	Asp Asn Val Thr Pro	Thr Gly Gly Asn
3410		3415	3420
His Val	Thr Met Val Thr	Ala Glu His Met Asn	Gln Leu Leu Lys
3425		3430	3435
Asn Val	Leu Lys Leu Ile	Lys Lys Asn Ile Gly	Asn Glu Asn Ala
3440		3445	3450
Pro Trp	Met Thr Arg Ile	Ala Thr Tyr Thr Gln	Gln Ile Ile Ile
3455		3460	3465
Asn Ser	Ser Glu Glu Leu	Leu Arg Asp Ser Phe	Leu Pro Leu Ala
3470		3475	3480
Glu Arg	Val Arg Lys Arg	Thr Asp Asn Met Phe	His Lys Glu Glu
3485		3490	3495

Ser	Leu	Arg	Gly	Phe	Ile	Lys	Ser	Ser	Thr	Asp	Asp	Thr	Ser	Gln
3500						3505					3510			
Val	Glu	Ser	Gln	Ile	Gln	Glu	Asp	Trp	Gln	Leu	Leu	Val	Arg	Asp
3515						3520					3525			
Ile	Tyr	Ser	Phe	Tyr	Pro	Leu	Leu	Ile	Lys	Tyr	Val	Asp	Leu	Gln
3530						3535					3540			
Arg	Asn	His	Trp	Leu	Arg	Asn	Asn	Val	Pro	Glu	Ala	Glu	Glu	Leu
3545						3550					3555			
Tyr	Asn	His	Val	Ala	Glu	Ile	Phe	Asn	Ile	Trp	Ser	Lys	Ser	Gln
3560						3565					3570			
Tyr	Phe	Leu	Lys	Glu	Glu	Gln	Asn	Phe	Ile	Ser	Ala	Asn	Glu	Ile
3575						3580					3585			
Asp	Asn	Met	Val	Leu	Ile	Met	Pro	Thr	Ala	Thr	Arg	Arg	Val	Thr
3590						3595					3600			
Ala	Val	Thr	Asp	Gly	Thr	Pro	Gln	Gly	Gly	Gly	Lys	Lys	Lys	Lys
3605						3610					3615			
Lys	His	Arg	Asp	Lys	Lys	Arg	Asp	Lys	Asp	Lys	Glu	Val	Gln	Ala
3620						3625					3630			
Ser	Leu	Met	Val	Ala	Cys	Leu	Lys	Arg	Leu	Leu	Pro	Val	Gly	Leu
3635						3640					3645			
Asn	Leu	Phe	Ala	Gly	Arg	Glu	Gln	Glu	Leu	Val	Gln	His	Cys	Lys
3650						3655					3660			
Asp	Arg	Phe	Leu	Lys	Val	Gly	Thr	Leu	Lys	Lys	Met	Ser	Glu	Gln
3665						3670					3675			
Asp	Val	Ala	Glu	Phe	Ala	Lys	Thr	Gln	Leu	Thr	Leu	Pro	Asp	Lys
3680						3685					3690			
Ile	Asp	Pro	Ala	Asp	Glu	Met	Ser	Trp	Gln	His	Tyr	Leu	Tyr	Ser
3695						3700					3705			
Lys	Leu	Gly	Ser	Lys	Ser	Lys	Ser	Asn	Ile	Thr	Val	Glu	Thr	Ala
3710						3715					3720			
Glu	Asn	Lys	Ala	Lys	Ile	Ile	Asp	Asp	Thr	Val	Glu	Arg	Ile	Val
3725						3730					3735			
Ala	Met	Ser	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile	Asp	His	Pro
3740						3745					3750			
Gln	Gln	Met	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val	Ser	Ile	Gln
3755						3760					3765			
Arg	Lys	Arg	Ala	Val	Ile	Ala	Cys	Phe	Arg	Gln	Thr	Ser	Leu	His
3770						3775					3780			
Ser	Leu	Pro	Arg	His	Arg	Ala	Cys	Asn	Ile	Phe	Ala	Arg	Thr	Tyr
3785						3790					3795			

Tyr	Glu	Leu	Trp	Leu	Glu	Glu	Glu	Asn	Ile	Gly	Gln	Glu	Val	Met
3800						3805					3810			
Ile	Glu	Asp	Leu	Thr	Gln	Ser	Phe	Glu	Asp	Ala	Glu	Leu	Lys	Lys
3815						3820					3825			
Ser	Asp	Val	Val	Glu	Glu	Gly	Glu	Lys	Pro	Asp	Pro	Leu	Thr	Gln
3830						3835					3840			
Leu	Val	Thr	Thr	Phe	Cys	Arg	Gly	Ala	Met	Thr	Glu	Arg	Ser	Gly
3845						3850					3855			
Ala	Leu	Gln	Glu	Asp	Pro	Leu	Tyr	Met	Ser	Tyr	Ala	His	Ile	Ile
3860						3865					3870			
Ala	Lys	Ser	Cys	Gly	Glu	Glu	Glu	Glu	Gly	Gly	Gly	Glu	Glu	
3875						3880					3885			
Glu	Glu	Gly	Gly	Gly	Glu	Ala	Glu	Ala	Glu	Asp	Glu	Gly	Arg	Ala
3890						3895					3900			
Ser	Ile	His	Glu	Gln	Glu	Met	Glu	Lys	Gln	Lys	Leu	Leu	Phe	His
3905						3910					3915			
Gln	Ala	Arg	Leu	Ala	Asp	Arg	Gly	Val	Ala	Glu	Met	Val	Leu	Leu
3920						3925					3930			
His	Ile	Ser	Ala	Ser	Lys	Gly	Leu	Pro	Ser	Glu	Met	Val	Met	Lys
3935						3940					3945			
Thr	Leu	Gln	Leu	Gly	Ile	Ser	Ile	Leu	Arg	Gly	Gly	Asn	Ile	Asp
3950						3955					3960			
Ile	Gln	Met	Gly	Met	Leu	Asn	His	Leu	Lys	Asp	Lys	Lys	Asp	Val
3965						3970					3975			
Gly	Phe	Phe	Thr	Ser	Ile	Ala	Gly	Leu	Met	Asn	Ser	Cys	Ser	Val
3980						3985					3990			
Leu	Asp	Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	Glu	Gly	Leu
3995						4000					4005			
Gly	Val	Gly	Leu	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	Met	His	Asp
4010						4015					4020			
Ala	Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	Leu	Thr	Cys
4025						4030					4035			
Glu	Gly	His	Asn	Leu	Asp	Trp	Gln	Asn	Tyr	Leu	Arg	Thr	Gln	Ala
4040						4045					4050			
Gly	Asn	Thr	Ala	Ala	Val	Asn	Val	Val	Ile	Cys	Thr	Val	Asp	Tyr
4055						4060					4065			
Leu	Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	Trp	His	Tyr
4070						4075					4080			
Ser	Ser	Lys	Glu	Leu	Ile	Asp	Pro	Ala	Gly	Lys	Ala	Asn	Phe	Phe
4085						4090					4095			

Lys	Ala	Ile	Gly	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	Leu	Thr	Glu
4100						4105					4110			
Val	Ile	Gln	Gly	Pro	Cys	Thr	Gln	Asn	Gln	Gln	Ala	Leu	Ala	His
4115						4120					4125			
Ser	Arg	Leu	Trp	Asp	Ala	Val	Gly	Gly	Phe	Leu	Phe	Leu	Phe	Ser
4130						4135					4140			
His	Met	Gln	Asp	Lys	Leu	Ser	Lys	His	Ser	Ser	Gln	Val	Asp	Leu
4145						4150					4155			
Leu	Lys	Glu	Leu	Leu	Asn	Leu	Gln	Lys	Asp	Met	Ile	Thr	Met	Met
4160						4165					4170			
Leu	Ser	Met	Leu	Glu	Gly	Asn	Val	Val	Asn	Gly	Thr	Ile	Gly	Lys
4175						4180					4185			
Gln	Met	Val	Asp	Thr	Leu	Val	Glu	Ser	Ala	Ser	Asn	Val	Glu	Leu
4190						4195					4200			
Ile	Leu	Lys	Tyr	Phe	Asp	Met	Phe	Leu	Lys	Leu	Lys	Asp	Leu	Thr
4205						4210					4215			
Ser	Ser	Ala	Ser	Phe	Gln	Glu	Ile	Asp	Ala	Asn	Asn	Asp	Gly	Trp
4220						4225					4230			
Val	Leu	Pro	Lys	Asp	Phe	Lys	Glu	Lys	Met	Glu	Gln	Gln	Lys	Ser
4235						4240					4245			
Tyr	Thr	Pro	Glu	Glu	Ile	Glu	Phe	Leu	Leu	Ala	Cys	Cys	Glu	Thr
4250						4255					4260			
Asn	His	Asp	Gly	Lys	Leu	Asp	Tyr	Ile	Gly	Phe	Cys	Asp	Arg	Phe
4265						4270					4275			
His	Glu	Pro	Ala	Lys	Glu	Ile	Gly	Phe	Asn	Leu	Ala	Val	Leu	Leu
4280						4285					4290			
Thr	Asn	Leu	Ser	Glu	His	Met	Pro	Asn	Glu	Pro	Arg	Leu	Ala	Arg
4295						4300					4305			
Phe	Leu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Asn	Tyr	Phe	Glu	Pro	Phe
4310						4315					4320			
Leu	Gly	Arg	Ile	Glu	Ile	Met	Gly	Gly	Ser	Lys	Arg	Ile	Glu	Arg
4325						4330					4335			
Val	Tyr	Phe	Glu	Ile	Lys	Glu	Ser	Asn	Ile	Glu	Gln	Trp	Glu	Lys
4340						4345					4350			
Pro	Gln	Ile	Lys	Glu	Ser	Lys	Arg	Ala	Phe	Phe	Tyr	Ser	Ile	Val
4355						4360					4365			
Thr	Glu	Gly	Gly	Asp	Lys	Glu	Lys	Leu	Glu	Ala	Phe	Val	Asn	Phe
4370						4375					4380			
Cys	Glu	Asp	Ala	Ile	Phe	Glu	Met	Thr	His	Ala	Ser	Gly	Leu	Met
4385						4390					4395			



Ala	Ala	Ser	Glu	Glu	Ser	Val	Gly	Gly	Thr	Lys	Asn	Arg	Glu	Ala
4400						4405					4410			
Ser	Tyr	Met	Tyr	Met	Gly	Asp	Asp	Asp	Asp	Glu	Arg	Ala	Gly	Lys
4415						4420					4425			
Asp	Pro	Phe	Arg	Arg	Gly	Leu	Gln	Ser	Val	Lys	Asp	Gly	Val	Ala
4430						4435					4440			
Thr	Ala	Phe	Ser	Ser	Leu	Ser	Pro	Ser	Asn	Ile	Lys	Ala	Lys	Ile
4445						4450					4455			
Ala	Asp	Met	Gln	Gln	Met	Pro	Pro	Ala	Glu	Leu	Ala	Val	Gly	Phe
4460						4465					4470			
Phe	Lys	Met	Phe	Phe	Tyr	Leu	Phe	Tyr	Tyr	Leu	Gly	Tyr	Gly	Val
4475						4480					4485			
Leu	Val	Val	Val	Arg	Tyr	Ile	Phe	Gly	Val	Leu	Leu	Gly	Leu	Met
4490						4495					4500			
Arg	Gly	Pro	Gln	Thr	Asp	Glu	Pro	Pro	Pro	Glu	Pro	Thr	Glu	Glu
4505						4510					4515			
Glu	Lys	Ile	Gly	Gln	Leu	Arg	His	Arg	Leu	Leu	Ala	Thr	Gln	Ser
4520						4525					4530			
Ser	Arg	His	Leu	Pro	Ala	Leu	Pro	Pro	Ala	Asp	Asp	Thr	Gly	Gln
4535						4540					4545			
Met	Gln	Val	Ser	Ala	Phe	Gly	Leu	Asp	Ile	Thr	Lys	Glu	Gly	Asn
4550						4555					4560			
Gly	Gln	Ile	Gln	Val	Lys	Pro	His	Glu	Ser	Pro	Ser	Thr	Ser	Thr
4565						4570					4575			
Pro	Ser	Ser	Gly	Glu	Glu	Ala	Glu	Val	Ser	Pro	Asp	Glu	Ser	Ala
4580						4585					4590			
Asp	His	Thr	Glu	Glu	Gln	Arg	Pro	Pro	Ser	Leu	Ile	Asp	Leu	Leu
4595						4600					4605			
Gly	Gly	Glu	Gln	Ala	Lys	Lys	Gln	Ala	Gln	Glu	Arg	Met	Glu	Ala
4610						4615					4620			
Gln	Ala	Ala	Gln	Gln	Ala	Ala	Met	Ser	Ala	Ile	Glu	Ala	Glu	Ser
4625						4630					4635			
Lys	Lys	Ala	Val	Gln	Gly	Pro	Ala	Pro	Ser	Ala	Leu	Ser	Gln	Val
4640						4645					4650			
Asp	Leu	Ser	Gln	Tyr	Thr	Arg	Arg	Val	Val	Ser	Phe	Leu	Ala	Arg
4655						4660					4665			
Asn	Phe	Tyr	Asn	Leu	Lys	Tyr	Val	Ala	Leu	Val	Leu	Ala	Phe	Cys
4670						4675					4680			
Ile	Asn	Phe	Val	Leu	Leu	Phe	Tyr	Lys	Val	Ser	Thr	Leu	Asp	Gly
4685						4690					4695			

Glu	Gly	Gly	Glu	Gly	Ser	Gly	Leu	Gly	Asp	Ile	Ile	Ala	Gly	Gly
4700						4705					4710			
Gly	Ser	Gly	Ser	Gly	Ala	Gly	Ser	Gly	Ser	Gly	Asp	Gly	Ser	Gly
4715						4720					4725			
Glu	Ser	Gly	Glu	Asp	Asp	Asp	Ala	Leu	Glu	Val	Val	His	Ile	Asp
4730						4735					4740			
Glu	Asp	Phe	Phe	Tyr	Met	Glu	His	Val	Ile	Lys	Met	Ala	Ala	Val
4745						4750					4755			
Leu	His	Ser	Ile	Val	Ser	Leu	Ala	Ile	Leu	Ile	Gly	Tyr	Tyr	His
4760						4765					4770			
Leu	Lys	Val	Pro	Leu	Ala	Ile	Phe	Lys	Arg	Glu	Lys	Glu	Ile	Ala
4775						4780					4785			
Arg	Lys	Leu	Glu	Phe	Asp	Gly	Leu	Tyr	Ile	Ala	Glu	Gln	Pro	Glu
4790						4795					4800			
Asp	Asp	Asp	Leu	Lys	Ser	His	Trp	Asp	Lys	Leu	Val	Ile	Ser	Ala
4805						4810					4815			
Lys	Ser	Phe	Pro	Val	Asn	Tyr	Trp	Asp	Lys	Phe	Val	Lys	Lys	Lys
4820						4825					4830			
Val	Arg	Ala	Lys	Tyr	Ser	Glu	Thr	Tyr	Asp	Phe	Asp	Ser	Ile	Ser
4835						4840					4845			
Asn	Met	Leu	Gly	Met	Glu	Lys	Thr	Ser	Phe	Ser	Ala	Gln	Glu	Glu
4850						4855					4860			
Glu	Gly	Ser	Lys	Gly	Leu	Ile	His	Tyr	Ile	Ile	Asn	Ile	Asp	Trp
4865						4870					4875			
Arg	Tyr	Gln	Val	Trp	Lys	Ala	Gly	Val	Thr	Ile	Thr	Asp	Asn	Ser
4880						4885					4890			
Phe	Leu	Tyr	Ser	Leu	Trp	Tyr	Phe	Ser	Phe	Ser	Val	Met	Gly	Asn
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Phe	Asn	Asn	Phe	Phe	Phe	Ala	Ala	His	Leu	Leu	Asp	Val	Ala	Val
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4940						4945					4950			
Tyr	Ile	Tyr	Thr	Val	Ile	Ala	Phe	Asn	Phe	Phe	Arg	Lys	Phe	Tyr
4955						4960					4965			
Val	Gln	Glu	Glu	Asp	Asp	Glu	Val	Asn	Arg	Asn	Cys	His	Asp	Met
4970						4975					4980			
Leu	Thr	Cys	Phe	Val	Phe	Asn	Leu	Tyr	Lys	Gly	Val	Arg	Ala	Gly
4985						4990					4995			

Gly Gly Ile Gly Asp Glu Leu Glu Pro Pro Asp Gly Asp Asp Ser  
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 Glu Val Tyr Arg Ile Ile Phe Asp Ile Ser Leu Phe Phe Phe Ile  
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 Ile Val Ile Leu Leu Ala Ile Leu Gln Gly Leu Ile Ile Asp Ala  
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 Glu Ser Asn Cys Phe Ile Cys Gly Ile Asn Lys Asp Tyr Phe Asp  
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 Leu Arg Thr Glu Asp Met Val Cys Leu Ser Cys Thr Ala Thr Gly Glu  
 20 25 30  
 agg gtg tgc ctg gct gcc gaa ggt ttc ggc aac cgg cac tgc ttc ctg 144  
 Arg Val Cys Leu Ala Ala Glu Gly Phe Gly Asn Arg His Cys Phe Leu  
 35 40 45  
 gag aat att gcc gac aag aac ata ccg cct gat ctg tgc cag tgt gtg 192  
 Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val

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acg gct gcg ggt tct gaa act ggg aaa gaa aac tta ggt aaa ggt acc Thr Ala Ala Gly Ser Glu Thr Gly Lys Glu Asn Leu Gly Lys Gly Thr 85 90 95			288
ggt tct ggt cat cgt acg cta tta tac ggc aat gct att ctt ttg cga Gly Ser Gly His Arg Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg 100 105 110			336
cat ctt aac agt gat atg tac ctg gcc tgc ctg tcg aca tca tca tcc His Leu Asn Ser Asp Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser 115 120 125			384
caa gat aag ctg gcc ttt gac gtg ggt ctg caa cag cac tcc cag ggt Gln Asp Lys Leu Ala Phe Asp Val Gly Leu Gln Gln His Ser Gln Gly 130 135 140			432
gaa gcc tgc tgg tgg acc ctg cat cct gcc agc aaa cag aga tcc gag Glu Ala Cys Trp Trp Thr Leu His Pro Ala Ser Lys Gln Arg Ser Glu 145 150 155 160			480
ggt gag aag gtg cga gtc gga gat gac ttg att ctt gtc tcc gtg gcc Gly Glu Lys Val Arg Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala 165 170 175			528
act gag aga tac ttg cac aca acg aaa gag aac gaa gta tcg ata gtg Thr Glu Arg Tyr Leu His Thr Thr Lys Glu Asn Glu Val Ser Ile Val 180 185 190			576
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Tyr Leu Val Ser Arg Glu Glu Ala Thr Thr Ala Ser Cys Ala Phe Cys			
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ctg cgt cag gag aag gat gat cag aag caa gtg tta gaa gac aag gac			1008
Leu Arg Gln Glu Lys Asp Asp Gln Lys Gln Val Leu Glu Asp Lys Asp			
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ttg gag gtc ata ggc gct ccc atc atc aaa tat ggt gac tcc acc gtc			1056
Leu Glu Val Ile Gly Ala Pro Ile Ile Lys Tyr Gly Asp Ser Thr Val			
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Ile Val Gln His Ser Glu Thr Gly Leu Trp Leu Ser Tyr Lys Ser Tyr			
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Glu Thr Lys Lys Lys Gly Val Gly Lys Val Glu Glu Lys Gln Ala Ile			
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Leu His Glu Glu Gly Lys Met Asp Asp Gly Leu Asp Phe Ser Arg Ser			
	385	390	400
cag gag gaa gaa tct agg act gct cga gtt atc agg aag tgt tct tcg			1248
Gln Glu Glu Glu Ser Arg Thr Ala Arg Val Ile Arg Lys Cys Ser Ser			
	405	410	415
ctg ttc act aag ttt atc aat ggg ctt gaa act cta caa gag aac cgt			1296
Leu Phe Thr Lys Phe Ile Asn Gly Leu Glu Thr Leu Gln Glu Asn Arg			
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Arg His Ser Met Phe Phe Ala Ser Val Asn Leu Gly Glu Met Val Met			
	435	440	445
tgc ctc gag gat ctc atc aac tac ttc gca cag cca gat gaa gat atg			1392
Cys Leu Glu Asp Leu Ile Asn Tyr Phe Ala Gln Pro Asp Glu Asp Met			
	450	455	460
gaa cac gaa gaa aag caa aac aaa ttc cgc gcc ctc cgc aac cgt cag			1440
Glu His Glu Glu Lys Gln Asn Lys Phe Arg Ala Leu Arg Asn Arg Gln			
	465	470	480
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Asp Leu Phe Gln Glu Glu Gly Ile Leu Asn Leu Ile Leu Glu Ala Ile			
	485	490	495
gac aag atc aac gtc atc aca tcc cag ggg ttc ctc gct ggt ttc ctg			1536
Asp Lys Ile Asn Val Ile Thr Ser Gln Gly Phe Leu Ala Gly Phe Leu			
	500	505	510
gca gga gac gaa tct gga caa agc tgg gaa atg ata tct gga tat ttg			1584
Ala Gly Asp Glu Ser Gly Gln Ser Trp Glu Met Ile Ser Gly Tyr Leu			
	515	520	525
tat cag ttg ctg gcg gca ata ata aaa ggc aac cac acg aac tgc gcg			1632
Tyr Gln Leu Leu Ala Ala Ile Ile Lys Gly Asn His Thr Asn Cys Ala			

530	535	540	
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tcg cag gcc tcg ggc gag ggc acc ggc atg ctc gac gtg ctg cac tgc Ser Gln Ala Ser Gly Glu Gly Thr Gly Met Leu Asp Val Leu His Cys 565 570 575			1728
gtc ctc ata gac tcg cct gaa gcg ctc aat atg atg cgg gac gaa cac Val Leu Ile Asp Ser Pro Glu Ala Leu Asn Met Met Arg Asp Glu His 580 585 590			1776
ata aaa gtg ata att tct cta tta gaa aag cat ggg cgc gac cca aaa Ile Lys Val Ile Ile Ser Leu Leu Glu Lys His Gly Arg Asp Pro Lys 595 600 605			1824
gta cta gat gtg cta tgt tca ctc tgc gtc ggt aac ggc gtc gcg gtg Val Leu Asp Val Leu Cys Ser Leu Cys Val Gly Asn Gly Val Ala Val 610 615 620			1872
cgc tcg tca cag aac aac atc tgc gac tac ttg ctg ccc ggc aag aac Arg Ser Ser Gln Asn Asn Ile Cys Asp Tyr Leu Leu Pro Gly Lys Asn 625 630 635 640			1920
ctg ttg ctg caa act gcg ctt gta gat cac gta tct agt gtc cgt ccg Leu Leu Leu Gln Thr Ala Leu Val Asp His Val Ser Ser Val Arg Pro 645 650 655			1968
aac atc ttc gtg ggt cga gta gaa ggt tca gcc gtg tac cgc aaa tgg Asn Ile Phe Val Gly Arg Val Glu Gly Ser Ala Val Tyr Arg Lys Trp 660 665 670			2016
tac ttc gaa gtg act atg gac cac ata gag aag acc aca cat atg atg Tyr Phe Glu Val Thr Met Asp His Ile Glu Lys Thr Thr His Met Met 675 680 685			2064
cca cat cta cgc ata gga tgg gct aac act act ggc tac gtc cca tac Pro His Leu Arg Ile Gly Trp Ala Asn Thr Thr Gly Tyr Val Pro Tyr 690 695 700			2112
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770	775	780	
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cgg ttc ctg cta ggc ggg gaa cac ggt aga ctc cgg tac gcg gct cca Arg Phe Leu Leu Gly Gly Glu His Gly Arg Leu Arg Tyr Ala Ala Pro 805 810 815			2448
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1010	1015	1020	
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1460	1465	1470	
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1685	1690	1695	
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ctg cag acc gag agc gtg cgc Leu Gln Thr Glu Ser Val Arg 1850	ccg cag atg aag atg acc gat atc Pro Gln Met Lys Met Thr Asp Ile 1855		5589
gct gaa agt ata acc gag atc Ala Glu Ser Ile Thr Glu Ile 1865	agc aac ctg tac tcg ccg tac ttc Ser Asn Leu Tyr Ser Pro Tyr Phe 1870		5634
ccg ctg gag gtg gta cgc gag Pro Leu Glu Val Val Arg Glu 1880	ttc gtg atg cag gcg ctg gct gaa Phe Val Met Gln Ala Leu Ala Glu 1885		5679
gct gtg gag acc aac cag gtg Ala Val Glu Thr Asn Gln Val 1895	cac aac cgg gat cct gta ggg ggg His Asn Arg Asp Pro Val Gly Gly 1900		5724
agc aat gag aac ctg ttc ctg Ser Asn Glu Asn Leu Phe Leu 1905	cct cta ata aag ttg gtg gac cgt Pro Leu Ile Lys Leu Val Asp Arg 1910		5769

1910				1915				1920							
ctc	ctg	ctg	gtc	ggc	atg	atg	atg	cgc	gac	gag	gat	gtg	gag	aag	cta
Leu	Leu	Leu	Val	Gly	Met	Met	Met	Arg	Asp	Glu	Asp	Val	Glu	Lys	Leu
1925				1930				1935							
ctc	atc	atg	acc	aac	cct	gag	aca	tgg	gac	ccc	tcg	ttt	gat	aaa	
Leu	Ile	Met	Thr	Asn	Pro	Glu	Thr	Trp	Asp	Pro	Ser	Phe	Asp	Lys	
1940				1945				1950							
gag	ggt	aaa	gac	gag	cac	cgc	aaa	ggt	cta	ctc	cac	atg	aaa	atg	
Glu	Gly	Lys	Asp	Glu	His	Arg	Lys	Gly	Leu	Leu	His	Met	Lys	Met	
1955				1960				1965							
gcg	gaa	ggc	gct	aag	ctg	cag	atg	tgt	tac	tta	ctg	caa	cat	ctc	
Ala	Glu	Gly	Ala	Lys	Leu	Gln	Met	Cys	Tyr	Leu	Leu	Gln	His	Leu	
1970				1975				1980							
aac	gac	ata	cag	ctg	cgg	cac	agg	gtc	gaa	gct	atc	att	gcg	ttt	
Asn	Asp	Ile	Gln	Leu	Arg	His	Arg	Val	Glu	Ala	Ile	Ile	Ala	Phe	
1985				1990				1995							
gcg	cat	gac	ttc	gtc	ggt	gat	cta	caa	act	gat	cag	ctc	aga	cgt	
Ala	His	Asp	Phe	Val	Gly	Asp	Leu	Gln	Thr	Asp	Gln	Leu	Arg	Arg	
2000				2005				2010							
tac	acg	gaa	atc	aag	cag	tct	gat	ttg	ccg	agc	gca	gtt	gcc	gct	
Tyr	Thr	Glu	Ile	Lys	Gln	Ser	Asp	Leu	Pro	Ser	Ala	Val	Ala	Ala	
2015				2020				2025							
aag	aag	acc	aga	gag	ttc	cgt	tgt	ccg	cct	aga	gaa	cag	atg	aac	
Lys	Lys	Thr	Arg	Glu	Phe	Arg	Cys	Pro	Pro	Arg	Glu	Gln	Met	Asn	
2030				2035				2040							
gct	ata	ctg	agt	ttc	aag	cac	cta	gaa	gag	gag	gac	aag	gag	aac	
Ala	Ile	Leu	Ser	Phe	Lys	His	Leu	Glu	Glu	Glu	Asp	Lys	Glu	Asn	
2045				2050				2055							
tgt	ccg	tgc	ggc	gag	gag	ctg	atc	gcg	cgc	atg	aac	gag	ttc	cac	
Cys	Pro	Cys	Gly	Glu	Glu	Leu	Ile	Ala	Arg	Met	Asn	Glu	Phe	His	
2060				2065				2070							
gac	acc	ctc	atg	gcg	cac	gtc	tcg	ctg	cac	gcg	ctg	cag	gag	cct	
Asp	Thr	Leu	Met	Ala	His	Val	Ser	Leu	His	Ala	Leu	Gln	Glu	Pro	
2075				2080				2085							
gat	gct	gcg	gaa	aat	caa	gaa	cca	gaa	gca	aaa	ccg	ggc	gca	ttc	
Asp	Ala	Ala	Glu	Asn	Gln	Glu	Pro	Glu	Ala	Lys	Pro	Gly	Ala	Phe	
2090				2095				2100							
ggc	aag	tta	tac	aac	att	atc	aac	acg	gta	aag	gaa	ttg	gaa	gaa	
Gly	Lys	Leu	Tyr	Asn	Ile	Ile	Asn	Thr	Val	Lys	Glu	Leu	Glu	Glu	
2105				2110				2115							
gaa	gct	aag	gca	att	gaa	gag	cct	ccg	aag	aag	acg	cct	gag	gag	
Glu	Ala	Lys	Ala	Ile	Glu	Glu	Pro	Pro	Lys	Lys	Thr	Pro	Glu	Glu	
2120				2125				2130							
aag	ttc	cgt	aag	gtc	ctc	atc	cag	acc	ata	gtg	aac	tgg	gct	gag	
Lys	Phe	Arg	Lys	Val	Leu	Ile	Gln	Thr	Ile	Val	Asn	Trp	Ala	Glu	

2135	2140	2145	
gag tcg cag ata gaa aca ccc Glu Ser Gln Ile Glu Thr Pro 2150	aaa ctc gtc aga gaa atg ttc agc Lys Leu Val Arg Glu Met Phe Ser 2155	gag ctg atc cgc gct Glu Leu Ile Arg Ala 2160	6489
ctt cta gtc cgc cag tac gac Leu Leu Val Arg Gln Tyr Asp 2165	gca gta ggt gag Ala Val Gly Glu 2170	ctg atc cgc gct Leu Ile Arg Ala 2175	6534
cta gag aag aca tac gtc atc Leu Glu Lys Thr Tyr Val Ile 2180	aac gcg aag acc aag Asn Ala Lys Thr Lys 2185	tta gat gtc Leu Asp Val 2190	6579
gcg gag atg tgg gtg ggg ctc Ala Glu Met Trp Val Gly Leu 2195	agc cag atc cga gcc Ser Gln Ile Arg Ala 2200	ctc ctg ccg Leu Leu Pro 2205	6624
gtg cag atg agc cag gag gaa Val Gln Met Ser Gln Glu Glu 2210	gag gaa ctc atg agg Glu Glu Leu Met Arg 2215	aag agg ctc Lys Arg Leu 2220	6669
tgg aaa ctt gtg aac aac cat Trp Lys Leu Val Asn Asn His 2225	acg ttc ttc cag cat Thr Phe Phe Gln His 2230	cca gat tta Pro Asp Leu 2235	6714
atc agg gtg ctc cgc gtg cac Ile Arg Val Leu Arg Val His 2240	gag aac gtg atg gcg Glu Asn Val Met Ala 2245	gtg atg atg Val Met Met 2250	6759
aac acg ctc ggc cgc cgc gcg Asn Thr Leu Gly Arg Arg Ala 2255	cag gcg cag tcc gac Gln Ala Gln Ser Asp 2260	gcg cag ccc Ala Gln Pro 2265	6804
tcc tca cag cct gtc gca gag Ser Ser Gln Pro Val Ala Glu 2270	gac aac aag gag aag Asp Asn Lys Glu Lys 2275	gac aca tca Asp Thr Ser 2280	6849
cac gag atg gtg gta gct tgc His Glu Met Val Val Ala Cys 2285	tgc cgt ttc ctc tgc Cys Arg Phe Leu Cys 2290	tac ttc tgc Tyr Phe Cys 2295	6894
cgc acc ggg aga cag aac cag Arg Thr Gly Arg Gln Asn Gln 2300	aag gcc atg ttc gac Lys Ala Met Phe Asp 2305	cac ttc gac His Phe Asp 2310	6939
ttc ctc ctg gag aac tcc aac Phe Leu Leu Glu Asn Ser Asn 2315	atc ttg ctg tcc aga Ile Leu Leu Ser Arg 2320	cct tcg ctg Pro Ser Leu 2325	6984
aga gga tcc acg cct ctg gac Arg Gly Ser Thr Pro Leu Asp 2330	gtg gct tac tcc agt Val Ala Tyr Ser Ser 2335	ctt atg gag Leu Met Glu 2340	7029
aat act gaa ctg gcc ctg gct Asn Thr Glu Leu Ala Leu Ala 2345	ttg aga gag cat tac Leu Arg Glu His Tyr 2350	ctg gag aag Leu Glu Lys 2355	7074
ata gca gtg tac ctg tcc cgc Ile Ala Val Tyr Leu Ser Arg 2355	tgc ggc ctg cag agc Cys Gly Leu Gln Ser 2360	aac tcg gag Asn Ser Glu 2365	7119

2360	2365	2370	
ctg gtg ' gag aag ggg tac cct gac ctc ggc tgg gat cca gtc gag			7164
Leu Val Glu Lys Gly Tyr Pro Asp Leu Gly Trp Asp Pro Val Glu			
2375	2380	2385	
ggg gag cgg tat ctt gac ttc ctg agg ttc tgt gtt tgg gta aac			7209
Gly Glu Arg Tyr Leu Asp Phe Leu Arg Phe Cys Val Trp Val Asn			
2390	2395	2400	
ggg gaa agc gta gaa gaa aac gcg aat ctg gtg atc cgt ctg ctg			7254
Gly Glu Ser Val Glu Glu Asn Ala Asn Leu Val Ile Arg Leu Leu			
2405	2410	2415	
atc cgt cgt ccg gag tgc ctc ggg ccg gcg ctg cgc ggc gag ggc			7299
Ile Arg Arg Pro Glu Cys Leu Gly Pro Ala Leu Arg Gly Glu Gly			
2420	2425	2430	
gag ggc ctg ctg aag gcc atc gtc gac gcc aac aag atg agc gag			7344
Glu Gly Leu Leu Lys Ala Ile Val Asp Ala Asn Lys Met Ser Glu			
2435	2440	2445	
agg atc gcc gac agg agg aag ctc agg gaa atg gag cag gag gga			7389
Arg Ile Ala Asp Arg Arg Lys Leu Arg Glu Met Glu Gln Glu Gly			
2450	2455	2460	
gat gtt aac ttc agc cac cct ctc ccg gag tcg gat gag gat gag			7434
Asp Val Asn Phe Ser His Pro Leu Pro Glu Ser Asp Glu Asp Glu			
2465	2470	2475	
gac tac atc gac acg ggc gcc gcc atc ttg aac ttc tac tgt acg			7479
Asp Tyr Ile Asp Thr Gly Ala Ala Ile Leu Asn Phe Tyr Cys Thr			
2480	2485	2490	
ttg gta gat ctg ctc gga aga tgt gct cct gat gct ggc gtt att			7524
Leu Val Asp Leu Leu Gly Arg Cys Ala Pro Asp Ala Gly Val Ile			
2495	2500	2505	
gct ctc ggc aag aac gag tct ctc cgt gcc cgc gct atc ctg cgg			7569
Ala Leu Gly Lys Asn Glu Ser Leu Arg Ala Arg Ala Ile Leu Arg			
2510	2515	2520	
tcg ctg gtg ccg ctg gag gac ctg cag gga gtg ctg agc ctg cgc			7614
Ser Leu Val Pro Leu Glu Asp Leu Gln Gly Val Leu Ser Leu Arg			
2525	2530	2535	
ttc acg ctc aac aac cct gct gct gga gag gaa cga ccc aag tct			7659
Phe Thr Leu Asn Asn Pro Ala Ala Gly Glu Glu Arg Pro Lys Ser			
2540	2545	2550	
gat atg cca tcg ggt cta atc ccg gga cac aag cag agc gtg gga			7704
Asp Met Pro Ser Gly Leu Ile Pro Gly His Lys Gln Ser Val Gly			
2555	2560	2565	
ctg ttc ctg gag aga gtg tat ggc atc gaa act cag gag ttg ttc			7749
Leu Phe Leu Glu Arg Val Tyr Gly Ile Glu Thr Gln Glu Leu Phe			
2570	2575	2580	
tac aaa ctg ctg gag gaa gcc ttc ctg cca gac ctt agg gct gcc			7794
Tyr Lys Leu Leu Glu Glu Ala Phe Leu Pro Asp Leu Arg Ala Ala			

2585	2590	2595	
act atg ctg gac agg aac gac Thr Met Leu Asp Arg Asn Asp 2600	ggc tgc gag tca gac Gly Cys Glu Ser Asp 2605	atg gcc ctg Met Ala Leu 2610	7839
tcg atg aac cgc tac atc ggc Ser Met Asn Arg Tyr Ile Gly 2615	aac tcg atc ctg ccg Asn Ser Ile Leu Pro 2620	ctg ctg atc Leu Leu Ile 2625	7884
aag cac gcg tac ttc tac aac Lys His Ala Tyr Phe Tyr Asn 2630	gaa gct gag aac tac Glu Ala Glu Asn Tyr 2635	gcc agt tta Ala Ser Leu 2640	7929
ctg gat gcc acg cta cat act Leu Asp Ala Thr Leu His Thr 2645	gtt tat agg tta tcg Val Tyr Arg Leu Ser 2650	aag aac cgc Lys Asn Arg 2655	7974
atg tta acc aag ggc caa cgt Met Leu Thr Lys Gly Gln Arg 2660	gaa gcg gtg tca gac Glu Ala Val Ser Asp 2665	ttc ctc gtg Phe Leu Val 2670	8019
gcg ctt act tca gcc atg cag Ala Leu Thr Ser Ala Met Gln 2675	ccg tct atg ttg ctc Pro Ser Met Leu Leu 2680	aag ctg ctg Lys Leu Leu 2685	8064
aga aaa ttg aca gtc gac gtg Arg Lys Leu Thr Val Asp Val 2690	tct aaa ctg tcc gag Ser Lys Leu Ser Glu 2695	tat acc act Tyr Thr Thr 2700	8109
gtc gct ctt agg ctg ctg acg Val Ala Leu Arg Leu Leu Thr 2705	ctg cac tac gag cgc Leu His Tyr Glu Arg 2710	tgc gcg aag Cys Ala Lys 2715	8154
tac tac ggc agc acg ggc gcg Tyr Tyr Gly Ser Thr Gly Ala 2720	ggg cag ggc gcg ttc Gly Gln Gly Ala Phe 2725	ggc gcg tcg Gly Ala Ser 2730	8199
tcg gac gag gag aag cgc ctc Ser Asp Glu Glu Lys Arg Leu 2735	acc atg atg ctc ttc Thr Met Met Leu Phe 2740	tcc aac atc Ser Asn Ile 2745	8244
ttc gac tcg ctc agc aag atg Phe Asp Ser Leu Ser Lys Met 2750	gac tac gag ccc gag Asp Tyr Glu Pro Glu 2755	ctc ttc ggg Leu Phe Gly 2760	8289
aag gcg ctg ccc tgt ctt att Lys Ala Leu Pro Cys Leu Ile 2765	gct ata gga tgc gct Ala Ile Gly Cys Ala 2770	ctg cct cct Leu Pro Pro 2775	8334
gac tac tct ctc tca aag aac Asp Tyr Ser Leu Ser Lys Asn 2780	tat gat gac gag ttt Tyr Asp Asp Glu Phe 2785	tac ggc aag Tyr Gly Lys 2790	8379
gag caa gct gca ggt gat tta Glu Gln Ala Ala Gly Asp Leu 2795	gac aac cct caa tac Asp Asn Pro Gln Tyr 2800	gac cct cag Asp Pro Gln 2805	8424
ccc ata aac acg tcc tca gta Pro Ile Asn Thr Ser Ser Val 2810	gca tta aac aat gat Ala Leu Asn Asn Asp 2815	ctc aac acc Leu Asn Thr 2820	8469

2810	2815	2820	
atc gta cag aag ttc tcg gaa cat tac cac gat gcg tgg gct agt Ile Val Gln Lys Phe Ser Glu His Tyr His Asp Ala Trp Ala Ser 2825 2830 2835			8514
agg aag att gag aac ggc tgg gtg tac ggg gag ggc tgg tct gat Arg Lys Ile Glu Asn Gly Trp Val Tyr Gly Glu Gly Trp Ser Asp 2840 2845 2850			8559
agc cag aag act cac cct agg ctg aag cct tat aat atg ctt aat Ser Gln Lys Thr His Pro Arg Leu Lys Pro Tyr Asn Met Leu Asn 2855 2860 2865			8604
gat tat gaa aaa gag cgt tac aag gag cca gta cgt gaa tct ctg Asp Tyr Glu Lys Glu Arg Tyr Lys Glu Pro Val Arg Glu Ser Leu 2870 2875 2880			8649
aag gca ctt cta gcc atc ggt tgg tct gta gaa cat tca gaa gta Lys Ala Leu Leu Ala Ile Gly Trp Ser Val Glu His Ser Glu Val 2885 2890 2895			8694
gac ata ccg agt aac aac cga agc tcc atg aga agg cag tcc aag Asp Ile Pro Ser Asn Asn Arg Ser Ser Met Arg Arg Gln Ser Lys 2900 2905 2910			8739
tcg gga ggc cgc cct ccc gaa att gtg aca gac tcg gcg act ccg Ser Gly Gly Arg Pro Pro Glu Ile Val Thr Asp Ser Ala Thr Pro 2915 2920 2925			8784
ttc aac tac aac cct cac cca gtc gac atg acc aac ttg acg cta Phe Asn Tyr Asn Pro His Pro Val Asp Met Thr Asn Leu Thr Leu 2930 2935 2940			8829
tcg agg gag atg cag aac atg gcg gag agg ctc gct gac aac gca Ser Arg Glu Met Gln Asn Met Ala Glu Arg Leu Ala Asp Asn Ala 2945 2950 2955			8874
cat gac atc tgg gcg aag aag aag aag gaa gaa ctt gtt act aat His Asp Ile Trp Ala Lys Lys Lys Lys Glu Glu Leu Val Thr Asn 2960 2965 2970			8919
gga ggt ggc atc cac ccc caa cta gta ccc tac gac ctc cta aca Gly Gly Gly Ile His Pro Gln Leu Val Pro Tyr Asp Leu Leu Thr 2975 2980 2985			8964
gac aaa gaa aag aag aaa gat cga gaa cgt tct cag gag ttc ctc Asp Lys Glu Lys Lys Lys Asp Arg Glu Arg Ser Gln Glu Phe Leu 2990 2995 3000			9009
aaa tac cta cag tac caa ggg tac aag ctc cac cgg ccc agc aag Lys Tyr Leu Gln Tyr Gln Gly Tyr Lys Leu His Arg Pro Ser Lys 3005 3010 3015			9054
gcg cca caa agt gat acg gaa caa acc act acg ggg gtt gca ata Ala Pro Gln Ser Asp Thr Glu Gln Thr Thr Thr Gly Val Ala Ile 3020 3025 3030			9099
gag ttg aga ttc gca tac tcg ctc ctc gag aaa ttg atc cag tac Glu Leu Arg Phe Ala Tyr Ser Leu Leu Glu Lys Leu Ile Gln Tyr 3035 3040 3045			9144



3035	3040	3045	
atc gat agg gcc acc att aat atg aag ctt ttg aaa cct tcg act Ile Asp Arg Ala Thr Ile Asn Met Lys Leu Leu Lys Pro Ser Thr 3050 3055 3060			9189
aca ttc agt agg aga agt agt ttt aag act agt acc agg gat att Thr Phe Ser Arg Arg Ser Ser Phe Lys Thr Ser Thr Arg Asp Ile 3065 3070 3075			9234
aag ttc ttt tct aag gtg gtg ctg cct cta atg gag aag tat ttc Lys Phe Phe Ser Lys Val Val Leu Pro Leu Met Glu Lys Tyr Phe 3080 3085 3090			9279
tcg acg cat cgt aac tac ttc ata gct gta gct acg gcg acg aat Ser Thr His Arg Asn Tyr Phe Ile Ala Val Ala Thr Ala Thr Asn 3095 3100 3105			9324
aat gtt ggt gca gca agc ctg aag gag aag gag atg gta gct gct Asn Val Gly Ala Ala Ser Leu Lys Glu Lys Glu Met Val Ala Ala 3110 3115 3120			9369
ctg ttc tgt aag ctg gct agc ttg ctt aga tct aga ctc gca gct Leu Phe Cys Lys Leu Ala Ser Leu Leu Arg Ser Arg Leu Ala Ala 3125 3130 3135			9414
ttc ggt cct gac gtc cgc atc aca gtc cgc tgt ctc caa gtg ttg Phe Gly Pro Asp Val Arg Ile Thr Val Arg Cys Leu Gln Val Leu 3140 3145 3150			9459
gtg aag ggc atc gac gcc aag tcc tta gtg aag aac tgc ccc gag Val Lys Gly Ile Asp Ala Lys Ser Leu Val Lys Asn Cys Pro Glu 3155 3160 3165			9504
ttc atc agg acc tcc atg ttg acc ttc ttc aac aat gtc gct gat Phe Ile Arg Thr Ser Met Leu Thr Phe Phe Asn Asn Val Ala Asp 3170 3175 3180			9549
gat gta ggg cat acc atc atg aat tta cag gat ggt aaa tac gcg Asp Val Gly His Thr Ile Met Asn Leu Gln Asp Gly Lys Tyr Ala 3185 3190 3195			9594
cac ctt cga ggt aca cat ttg aag acg tcc acg tcc ctg ggc tat His Leu Arg Gly Thr His Leu Lys Thr Ser Thr Ser Leu Gly Tyr 3200 3205 3210			9639
atc aat gga gta ctg ctc ccc ata ctg acg gcc aag ttc gac cat Ile Asn Gly Val Leu Leu Pro Ile Leu Thr Ala Lys Phe Asp His 3215 3220 3225			9684
ctg gct aac tgc gag tac ggt gct gat ctg ttg ttg gac gag ata Leu Ala Asn Cys Glu Tyr Gly Ala Asp Leu Leu Leu Asp Glu Ile 3230 3235 3240			9729
caa gtg gcg tca tac aag atg ttg ggc tcc ctg tac gcg ctc ggc Gln Val Ala Ser Tyr Lys Met Leu Gly Ser Leu Tyr Ala Leu Gly 3245 3250 3255			9774
acg gac gct tcg ctc aca cac gac aga aag tac ctc aag act gag Thr Asp Ala Ser Leu Thr His Asp Arg Lys Tyr Leu Lys Thr Glu 3260 3265 3270			9819

	3260					3265					3270					
att	gag	aga	cat	aaa	cct	gct	ttg	ggt	tcg	tgt	cta	ggt	gcg	ttc	9864	
Ile	Glu	Arg	His	Lys	Pro	Ala	Leu	Gly	Ser	Cys	Leu	Gly	Ala	Phe		
	3275					3280					3285					
agt	tcg	aca	ttc	cca	gtg	gcg	ttc	ttg	gaa	cct	cac	ctg	aac	aaa	9909	
Ser	Ser	Thr	Phe	Pro	Val	Ala	Phe	Leu	Glu	Pro	His	Leu	Asn	Lys		
	3290					3295					3300					
cac	aac	cag	ttc	tcc	ttg	ctg	aac	agg	atc	gct	gac	cat	tct	ttg	9954	
His	Asn	Gln	Phe	Ser	Leu	Leu	Asn	Arg	Ile	Ala	Asp	His	Ser	Leu		
	3305					3310					3315					
gaa	gcc	caa	gac	ata	atg	cag	aaa	atg	gaa	caa	tgc	atg	ccg	acg	9999	
Glu	Ala	Gln	Asp	Ile	Met	Gln	Lys	Met	Glu	Gln	Cys	Met	Pro	Thr		
	3320					3325					3330					
cta	gag	acg	atc	tta	ggc	gag	gtg	gac	caa	ttc	gtg	gag	tca	gac	10044	
Leu	Glu	Thr	Ile	Leu	Gly	Glu	Val	Asp	Gln	Phe	Val	Glu	Ser	Asp		
	3335					3340					3345					
aag	acg	tac	aac	gag	gcg	ccg	cat	atc	atc	gat	gtg	gtg	ctg	cct	10089	
Lys	Thr	Tyr	Asn	Glu	Ala	Pro	His	Ile	Ile	Asp	Val	Val	Leu	Pro		
	3350					3355					3360					
tta	ctc	tgt	tct	tat	ttg	ccg	ttc	tgg	tgg	gca	cag	ggg	cct	gat	10134	
Leu	Leu	Cys	Ser	Tyr	Leu	Pro	Phe	Trp	Trp	Ala	Gln	Gly	Pro	Asp		
	3365					3370					3375					
aat	gtt	act	cct	act	ggc	gga	aac	cac	gta	aca	atg	gta	aca	gcg	10179	
Asn	Val	Thr	Pro	Thr	Gly	Gly	Asn	His	Val	Thr	Met	Val	Thr	Ala		
	3380					3385					3390					
gaa	cac	atg	aac	cag	ctc	ctc	aag	aat	gtt	ctg	aag	ctc	atc	aaa	10224	
Glu	His	Met	Asn	Gln	Leu	Leu	Lys	Asn	Val	Leu	Lys	Leu	Ile	Lys		
	3395					3400					3405					
aag	aac	atc	ggc	aat	gag	aac	gcg	ccg	tgg	atg	acc	cgc	atc	gcc	10269	
Lys	Asn	Ile	Gly	Asn	Glu	Asn	Ala	Pro	Trp	Met	Thr	Arg	Ile	Ala		
	3410					3415					3420					
acc	tac	acg	cag	cag	atc	atc	atc	aac	agc	tcc	gag	gaa	ctg	ctg	10314	
Thr	Tyr	Thr	Gln	Gln	Ile	Ile	Ile	Asn	Ser	Ser	Glu	Glu	Leu	Leu		
	3425					3430					3435					
agg	gat	tcc	ttc	ctg	ccg	ctc	gct	gaa	cgt	gtt	cgc	aaa	cgc	acg	10359	
Arg	Asp	Ser	Phe	Leu	Pro	Leu	Ala	Glu	Arg	Val	Arg	Lys	Arg	Thr		
	3440					3445					3450					
gac	aat	atg	ttc	cat	aag	gag	gag	agc	ttg	aga	ggg	ttt	att	aag	10404	
Asp	Asn	Met	Phe	His	Lys	Glu	Glu	Ser	Leu	Arg	Gly	Phe	Ile	Lys		
	3455					3460					3465					
tcg	tca	aca	gac	gac	aca	tcc	cag	gta	gag	tct	cag	ata	caa	gaa	10449	
Ser	Ser	Thr	Asp	Asp	Thr	Ser	Gln	Val	Glu	Ser	Gln	Ile	Gln	Glu		
	3470					3475					3480					
gac	tgg	cag	ctg	ctg	gtc	aga	gac	atc	tac	tcc	ttc	tac	ccg	ctg	10494	
Asp	Trp	Gln	Leu	Leu	Val	Arg	Asp	Ile	Tyr	Ser	Phe	Tyr	Pro	Leu		

3485						3490						3495					
ctc	atc	aag	tac	gtc	gac	ctg	cag	agg	aac	cac	tgg	ctc	agg	aac		10539	
Leu	Ile	Lys	Tyr	Val	Asp	Leu	Gln	Arg	Asn	His	Trp	Leu	Arg	Asn			
3500						3505						3510					
aat	gtt	cca	gag	gcg	gaa	gag	ctg	tac	aac	cac	gtg	gct	gaa	atc		10584	
Asn	Val	Pro	Glu	Ala	Glu	Glu	Leu	Tyr	Asn	His	Val	Ala	Glu	Ile			
3515						3520						3525					
ttc	aac	atc	tgg	tcg	aag	agc	cag	tac	ttc	ttg	aag	gag	gaa	cag		10629	
Phe	Asn	Ile	Trp	Ser	Lys	Ser	Gln	Tyr	Phe	Leu	Lys	Glu	Glu	Gln			
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aac	ttc	atc	tct	gcc	aac	gaa	att	gat	aac	atg	gtg	ctg	att	atg		10674	
Asn	Phe	Ile	Ser	Ala	Asn	Glu	Ile	Asp	Asn	Met	Val	Leu	Ile	Met			
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cca	aca	gca	aca	aga	aga	gtg	aca	gca	gta	aca	gat	ggg	act	cct		10719	
Pro	Thr	Ala	Thr	Arg	Arg	Val	Thr	Ala	Val	Thr	Asp	Gly	Thr	Pro			
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caa	ggg	ggg	gga	aag	aaa	aag	aag	aag	cac	cgt	gat	aag	aaa	cgc		10764	
Gln	Gly	Gly	Gly	Lys	Lys	Lys	Lys	Lys	His	Arg	Asp	Lys	Lys	Arg			
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gac	aaa	gac	aag	gaa	gtc	caa	gcg	tcc	cta	atg	gta	gct	tgt	ctg		10809	
Asp	Lys	Asp	Lys	Glu	Val	Gln	Ala	Ser	Leu	Met	Val	Ala	Cys	Leu			
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Lys	Arg	Leu	Leu	Pro	Val	Gly	Leu	Asn	Leu	Phe	Ala	Gly	Arg	Glu			
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caa	gaa	ctg	gtg	cag	cat	tgt	aaa	gac	agg	ttc	ctg	aag	aaa	atg		10899	
Gln	Glu	Leu	Val	Gln	His	Cys	Lys	Asp	Arg	Phe	Leu	Lys	Lys	Met			
3620						3625						3630					
tca	gaa	caa	gat	gtg	gca	gaa	ttc	gcg	aag	acc	cag	ctg	aca	ctt		10944	
Ser	Glu	Gln	Asp	Val	Ala	Glu	Phe	Ala	Lys	Thr	Gln	Leu	Thr	Leu			
3635						3640						3645					
cca	gat	aaa	ata	gat	ccg	gca	gac	gaa	atg	tct	tgg	caa	cat	tac		10989	
Pro	Asp	Lys	Ile	Asp	Pro	Ala	Asp	Glu	Met	Ser	Trp	Gln	His	Tyr			
3650						3655						3660					
ttg	tat	agc	aag	tta	ggg	tcg	aag	agt	aag	agc	aat	ata	act	gtg		11034	
Leu	Tyr	Ser	Lys	Leu	Gly	Ser	Lys	Ser	Lys	Ser	Asn	Ile	Thr	Val			
3665						3670						3675					
gaa	act	gct	gaa	aat	aag	gcc	aag	att	att	gat	gat	acc	gtc	gag		11079	
Glu	Thr	Ala	Glu	Asn	Lys	Ala	Lys	Ile	Ile	Asp	Asp	Thr	Val	Glu			
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aga	atc	gtc	gct	atg	agt	aaa	gtg	ctt	ttc	gga	ttg	cat	atg	atc		11124	
Arg	Ile	Val	Ala	Met	Ser	Lys	Val	Leu	Phe	Gly	Leu	His	Met	Ile			
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gac	cat	ccc	caa	caa	atg	agt	aag	aac	gtg	tac	cgg	tcg	gtg	gtg		11169	
Asp	His	Pro	Gln	Gln	Met	Ser	Lys	Asn	Val	Tyr	Arg	Ser	Val	Val			

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tca cta cat tct ctg ccg aga cat cga gcg tgt aac atc ttc gct Ser Leu His Ser Leu Pro Arg His Arg Ala Cys Asn Ile Phe Ala 3740 3745 3750			11259
cgc acg tac tac gag ctc tgg ctg gaa gag gag aac att gga caa Arg Thr Tyr Tyr Glu Leu Trp Leu Glu Glu Glu Asn Ile Gly Gln 3755 3760 3765			11304
gaa gta atg ata gaa gat ctt act caa tca ttc gaa gac gca gag Glu Val Met Ile Glu Asp Leu Thr Gln Ser Phe Glu Asp Ala Glu 3770 3775 3780			11349
ctg aag aag agt gac gtg gtg gag gaa ggt gag aag cct gac ccc Leu Lys Lys Ser Asp Val Val Glu Glu Gly Glu Lys Pro Asp Pro 3785 3790 3795			11394
ctc acg cag ctg gtc acc acc ttc tgt cgc ggt gcc atg act gag Leu Thr Gln Leu Val Thr Thr Phe Cys Arg Gly Ala Met Thr Glu 3800 3805 3810			11439
agg tcc ggc gct ttg cag gag gat cct cta tac atg tct tac gca Arg Ser Gly Ala Leu Gln Glu Asp Pro Leu Tyr Met Ser Tyr Ala 3815 3820 3825			11484
cac atc ata gcg aag tcc tgt gga gaa gaa gag gaa gaa ggg ggt His Ile Ile Ala Lys Ser Cys Gly Glu Glu Glu Glu Glu Gly Gly 3830 3835 3840			11529
ggg gag gaa gag gaa ggg ggt gga gaa gca gag gct gaa gac gaa Gly Glu Glu Glu Glu Gly Gly Gly Glu Ala Glu Ala Glu Asp Glu 3845 3850 3855			11574
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aat att gat ata cag atg ggt atg ttg aac cac ttg aaa gac aag Asn Ile Asp Ile Gln Met Gly Met Leu Asn His Leu Lys Asp Lys 3920 3925 3930			11799
aaa gac gtg ggc ttc ttt acg tcc atc gcc ggc ctc atg aac tcc Lys Asp Val Gly Phe Phe Thr Ser Ile Ala Gly Leu Met Asn Ser 3935 3940 3945			11844

3935					3940					3945					
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Cys	Ser	Val	Leu	Asp	Leu	Asp	Ala	Phe	Glu	Arg	Asn	Thr	Lys	Ala	
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gaa ggt					ctg ggc					gag aag aac					11934
Glu	Gly	Leu	Gly	Val	Gly	Leu	Glu	Gly	Ala	Ala	Gly	Glu	Lys	Asn	
3965					3970					3975					
atg cat					gac gcc					gag ttc					11979
Met	His	Asp	Ala	Glu	Phe	Thr	Cys	Ala	Leu	Phe	Arg	Phe	Ile	Gln	
3980					3985					3990					
ctc acc					tgt gaa					gag aac					12024
Leu	Thr	Cys	Glu	Gly	His	Asn	Leu	Asp	Trp	Gln	Asn	Tyr	Leu	Arg	
3995					4000					4005					
act cag					gcc ggt					aac acg					12069
Thr	Gln	Ala	Gly	Asn	Thr	Thr	Thr	Val	Asn	Val	Val	Ile	Cys	Thr	
4010					4015					4020					
gtc gac					tac ctg					ctg cgg					12114
Val	Asp	Tyr	Leu	Leu	Arg	Leu	Gln	Glu	Ser	Ile	Met	Asp	Phe	Tyr	
4025					4030					4035					
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Trp	His	Tyr	Ser	Ser	Lys	Glu	Leu	Ile	Asp	Pro	Ala	Gly	Lys	Ala	
4040					4045					4050					
aac ttc					ttc aag					gcc att					12204
Asn	Phe	Phe	Lys	Ala	Ile	Gly	Val	Ala	Ser	Gln	Val	Phe	Asn	Thr	
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ctc act					gaa gtc					ata cag					12249
Leu	Thr	Glu	Val	Ile	Gln	Gly	cct	tgt	acg	cag	aat	cag	cag	gct	
4070					4075					4080					
ttg gct					cac tcc					agg ttg					12294
Leu	Ala	His	Ser	Arg	Leu	Trp	gac	gct	gtc	ggg	ggg	ttc	ctg	ttc	
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cta ttc					tcc cac					atg cag					12339
Leu	Phe	Ser	His	Met	Gln	Asp	aag	ttg	tcg	aag	cac	tcg	tcg	cag	
4100					4105					4110					
gtg gac					ctg ctg					aag gaa					12384
Val	Asp	Leu	Leu	Lys	Glu	Leu	ctc	aat	ctg	cag	aag	gac	atg	atc	
4115					4120					4125					
acc atg					atg ctg					tcc atg					12429
Thr	Met	Met	Leu	Ser	Met	Leu	gaa	gga	aat	gtt	gtt	aat	ggg	aca	
4130					4135					4140					
atc ggc					aag caa					atg gtg					12474
Ile	Gly	Lys	Gln	Met	Val	Asp	aca	cta	gta	gaa	tcg	gcc	tcc	aac	
4145					4150					4155					
gtg gaa					ctg atc					ctg aaa					12519
Val	Glu	Leu	Ile	Leu	Lys	Tyr	ttc	gac	atg	ttc	ctc	aag	ctg	aag	

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gac ggc tgg gtg ctg ccc aag gac ttc aag gag aaa atg gaa caa Asp Gly Trp Val Leu Pro Lys Asp Phe Lys Glu Lys Met Glu Gln 4190 4195 4200	12609		
cag aag agt tat act ccc gaa gaa atc gag ttc ctc cta gct tgc Gln Lys Ser Tyr Thr Pro Glu Glu Ile Glu Phe Leu Leu Ala Cys 4205 4210 4215	12654		
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Ala	Lys	Ile	Ala	Asp	Met	Gln	Gln	Met	Pro	Pro	Ala	Glu	Leu	Ala			
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Val	Gly	Phe	Phe	Lys	Met	Phe	Phe	Tyr	Leu	Phe	Tyr	Tyr	Leu	Gly			
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Tyr	Gly	Val	Leu	Val	Val	Val	Arg	Tyr	Ile	Phe	Gly	Val	Leu	Leu			
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Thr	Glu	Glu	Glu	Lys	Ile	Gly	Gln	Leu	Arg	His	Arg	Leu	Leu	Ala			
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Thr	Gln	Ser	Ser	Arg	His	Leu	Pro	Ala	Leu	Pro	Pro	Ala	Asp	Asp			
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Met	Glu	Ala	Gln	Ala	Ala	Gln	Gln	Ala	Ala	Met	Ser	Ala	Ile	Glu			
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Ala	Glu	Ser	Lys	Lys	Ala	Val	Gln	Gly	Pro	Ala	Pro	Ser	Ala	Leu			
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Ser	Gln	Val	Asp	Leu	Ser	Gln	Tyr	Thr	Arg	Arg	Ala	Val	Ser	Phe			

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gcc ttc tgt atc aac ttc gtg ctg ctc ttc tat aag gta tct acc Ala Phe Cys Ile Asn Phe Val Leu Leu Phe Tyr Lys Val Ser Thr 4640 4645 4650			13959
ctg gat ggt gaa ggt ggt gaa ggt tca ggt ctg ggt gac atc atc Leu Asp Gly Glu Gly Gly Glu Gly Ser Gly Leu Gly Asp Ile Ile 4655 4660 4665			14004
gcc ggt ggg ggt tcc gga tcc ggg gct ggc tct ggc agt gga gac Ala Gly Gly Gly Ser Gly Ser Gly Ala Gly Ser Gly Ser Gly Asp 4670 4675 4680			14049
ggg agc ggc gag tca ggg gaa gat gac gac gcg tta gaa gta gta Gly Ser Gly Glu Ser Gly Glu Asp Asp Asp Ala Leu Glu Val Val 4685 4690 4695			14094
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cgg cct gaa gac gac gac ctc aag agc cac tgg gac aag ctc gtt Arg Pro Glu Asp Asp Asp Leu Lys Ser His Trp Asp Lys Leu Val 4760 4765 4770			14319
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4835	4840	4845	
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Met Gly Asn Phe Asn Asn Phe Phe Phe Ala Ala His Leu Leu Asp			
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Val Ala Val Gly Phe Lys Thr Leu Arg Thr Ile Leu Gln Ser Val			
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Thr His Asn Gly Lys Gln Leu Val Leu Thr Val Met Leu Leu Thr			
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Ile Ile Val Tyr Ile Tyr Thr Val Ile Ala Phe Asn Phe Phe Arg			
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Lys Phe Tyr Val Gln Glu Glu Asp Asp Glu Val Asn Arg Asn Cys			
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His Asp Met Leu Thr Cys Phe Val Phe Asn Leu Tyr Lys Gly Val			
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Arg Ala Gly Gly Gly Ile Gly Asp Glu Leu Glu Pro Pro Asp Gly			
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Asp Asp Ser Glu Val Tyr Arg Ile Ile Phe Asp Ile Ser Phe Phe			
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Phe Phe Ile Ile Val Ile Leu Leu Ala Ile Leu Gln Gly Leu Ile			
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Ile Asp Ala Phe Gly Glu Leu Arg Asp Gln Leu Glu Ser Val Lys			
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Glu Asp Met Glu Ser Asn Cys Phe Ile Cys Gly Ile Asn Lys Asp			
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Tyr Phe Asp Lys Val Pro His Gly Phe Asp Thr His Val Gln Arg			
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Glu His Asn Leu Ala Asn Tyr Met Phe Phe Leu Met His Leu Ile			
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Asn Lys Pro Asp Thr Glu Tyr Thr Gly Gln Glu Thr Tyr Val Trp			

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Asn Met Tyr Thr Gln Arg Cys	Trp Asp Phe Phe Pro	Val Gly Asp	
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 35 40 45  
 Glu Asn Ile Ala Asp Lys Asn Ile Pro Pro Asp Leu Ser Gln Cys Val  
 50 55 60  
 Phe Val Ile Glu Gln Ala Leu Ser Val Arg Ala Leu Gln Glu Leu Val  
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 Thr Ala Ala Gly Ser Glu Thr Gly Lys Glu Asn Leu Gly Lys Gly Thr  
 85 90 95  
 Gly Ser Gly His Arg Thr Leu Leu Tyr Gly Asn Ala Ile Leu Leu Arg  
 100 105 110  
 His Leu Asn Ser Asp Met Tyr Leu Ala Cys Leu Ser Thr Ser Ser Ser  
 115 120 125  
 Gln Asp Lys Leu Ala Phe Asp Val Gly Leu Gln Gln His Ser Gln Gly  
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 Glu Ala Cys Trp Trp Thr Leu His Pro Ala Ser Lys Gln Arg Ser Glu  
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 Gly Glu Lys Val Arg Val Gly Asp Asp Leu Ile Leu Val Ser Val Ala  
 165 170 175  
 Thr Glu Arg Tyr Leu His Thr Thr Lys Glu Asn Glu Val Ser Ile Val  
 180 185 190  
 Asn Ala Ser Phe His Val Thr His Trp Ser Val Gln Pro Tyr Gly Thr  
 195 200 205  
 Gly Ile Ser Arg Met Lys Tyr Val Gly Tyr Val Phe Gly Gly Asp Val

210					215					220					
Leu	Arg	Phe	Phe	His	Gly	Gly	Asp	Glu	Cys	Leu	Thr	Ile	Pro	Ser	Thr
225					230					235					240
Trp	Thr	Lys	Asp	Gly	Gly	Gln	Asn	Ile	Val	Val	Tyr	Glu	Gly	Gly	Ser
				245					250						255
Val	Met	Ser	Gln	Ala	Arg	Ser	Leu	Trp	Arg	Leu	Glu	Leu	Ala	Arg	Thr
			260					265					270		
Lys	Trp	Ala	Gly	Gly	Phe	Ile	Asn	Trp	Tyr	His	Pro	Met	Arg	Ile	Arg
		275					280					285			
His	Ile	Thr	Thr	Gly	Arg	Tyr	Leu	Gly	Val	Asn	Asp	Gln	Asn	Glu	Leu
	290					295					300				
Tyr	Leu	Val	Ser	Arg	Glu	Glu	Ala	Thr	Thr	Ala	Ser	Cys	Ala	Phe	Cys
305					310					315					320
Leu	Arg	Gln	Glu	Lys	Asp	Asp	Gln	Lys	Gln	Val	Leu	Glu	Asp	Lys	Asp
				325					330					335	
Leu	Glu	Val	Ile	Gly	Ala	Pro	Ile	Ile	Lys	Tyr	Gly	Asp	Ser	Thr	Val
			340					345					350		
Ile	Val	Gln	His	Ser	Glu	Thr	Gly	Leu	Trp	Leu	Ser	Tyr	Lys	Ser	Tyr
		355					360					365			
Glu	Thr	Lys	Lys	Lys	Gly	Val	Gly	Lys	Val	Glu	Glu	Lys	Gln	Ala	Ile
	370					375					380				
Leu	His	Glu	Glu	Gly	Lys	Met	Asp	Asp	Gly	Leu	Asp	Phe	Ser	Arg	Ser
385					390					395					400
Gln	Glu	Glu	Glu	Ser	Arg	Thr	Ala	Arg	Val	Ile	Arg	Lys	Cys	Ser	Ser
				405					410					415	
Leu	Phe	Thr	Lys	Phe	Ile	Asn	Gly	Leu	Glu	Thr	Leu	Gln	Glu	Asn	Arg
			420					425					430		
Arg	His	Ser	Met	Phe	Phe	Ala	Ser	Val	Asn	Leu	Gly	Glu	Met	Val	Met
		435					440					445			
Cys	Leu	Glu	Asp	Leu	Ile	Asn	Tyr	Phe	Ala	Gln	Pro	Asp	Glu	Asp	Met
	450					455					460				
Glu	His	Glu	Glu	Lys	Gln	Asn	Lys	Phe	Arg	Ala	Leu	Arg	Asn	Arg	Gln
465						470					475				480
Asp	Leu	Phe	Gln	Glu	Glu	Gly	Ile	Leu	Asn	Leu	Ile	Leu	Glu	Ala	Ile
				485					490					495	
Asp	Lys	Ile	Asn	Val	Ile	Thr	Ser	Gln	Gly	Phe	Leu	Ala	Gly	Phe	Leu
			500					505					510		
Ala	Gly	Asp	Glu	Ser	Gly	Gln	Ser	Trp	Glu	Met	Ile	Ser	Gly	Tyr	Leu
		515					520					525			
Tyr	Gln	Leu	Leu	Ala	Ala	Ile	Ile	Lys	Gly	Asn	His	Thr	Asn	Cys	Ala

530					535					540					
Gln	Phe	Ala	Asn	Ser	Asn	Arg	Leu	Asn	Trp	Leu	Phe	Ser	Arg	Leu	Gly
545					550					555					560
Ser	Gln	Ala	Ser	Gly	Glu	Gly	Thr	Gly	Met	Leu	Asp	Val	Leu	His	Cys
				565					570					575	
Val	Leu	Ile	Asp	Ser	Pro	Glu	Ala	Leu	Asn	Met	Met	Arg	Asp	Glu	His
			580					585					590		
Ile	Lys	Val	Ile	Ile	Ser	Leu	Leu	Glu	Lys	His	Gly	Arg	Asp	Pro	Lys
		595					600					605			
Val	Leu	Asp	Val	Leu	Cys	Ser	Leu	Cys	Val	Gly	Asn	Gly	Val	Ala	Val
	610					615					620				
Arg	Ser	Ser	Gln	Asn	Asn	Ile	Cys	Asp	Tyr	Leu	Leu	Pro	Gly	Lys	Asn
625						630					635				640
Leu	Leu	Leu	Gln	Thr	Ala	Leu	Val	Asp	His	Val	Ser	Ser	Val	Arg	Pro
				645					650					655	
Asn	Ile	Phe	Val	Gly	Arg	Val	Glu	Gly	Ser	Ala	Val	Tyr	Arg	Lys	Trp
			660					665					670		
Tyr	Phe	Glu	Val	Thr	Met	Asp	His	Ile	Glu	Lys	Thr	Thr	His	Met	Met
		675					680					685			
Pro	His	Leu	Arg	Ile	Gly	Trp	Ala	Asn	Thr	Thr	Gly	Tyr	Val	Pro	Tyr
	690					695					700				
Pro	Gly	Gly	Gly	Glu	Lys	Trp	Gly	Gly	Asn	Gly	Val	Gly	Asp	Asp	Leu
705						710					715				720
Tyr	Ser	Tyr	Gly	Leu	Asp	Gly	Ala	Tyr	Leu	Trp	Ser	Gly	Gly	Arg	Lys
				725					730					735	
Thr	Pro	Val	Asn	Arg	Thr	His	Ala	Glu	Glu	Pro	Tyr	Ile	Arg	Lys	Gly
			740					745					750		
Asp	Val	Ile	Gly	Cys	Ala	Leu	Asp	Leu	Thr	Val	Pro	Ile	Ile	Asn	Phe
		755					760					765			
Met	Phe	Asn	Gly	Val	Arg	Val	Thr	Gly	Ser	Phe	Thr	Asn	Phe	Asn	Leu
	770					775					780				
Glu	Gly	Met	Phe	Phe	Pro	Val	Ile	Ser	Cys	Ser	Ser	Lys	Leu	Ser	Cys
785						790					795				800
Arg	Phe	Leu	Leu	Gly	Gly	Glu	His	Gly	Arg	Leu	Arg	Tyr	Ala	Ala	Pro
				805					810					815	
Glu	Gly	Tyr	Ser	Pro	Leu	Val	Glu	Ser	Leu	Leu	Pro	Gln	Gln	Ile	Leu
			820					825					830		
Ser	Leu	Glu	Pro	Cys	Phe	Tyr	Phe	Gly	Asn	Leu	Ser	Lys	Arg	Ala	Leu
		835					840					845			
Ala	Gly	Pro	Pro	Leu	Val	Gln	Asp	Asp	Thr	Ala	Phe	Val	Pro	Thr	Pro

850	855	860
Val Asp Thr Leu Gln Ile Thr Leu Pro Thr Tyr Val Glu Gln Ile Arg		
865	870	875 880
Asp Lys Leu Ala Glu Asn Ile His Glu Met Trp Ala Met Asn Lys Ile		
	885	890 895
Glu Ala Gly Trp Met Tyr Gly Asp Gln Arg Glu Asp Leu His Lys Ile		
	900	905 910
His Pro Cys Leu Val Pro Phe Glu Arg Leu Pro Pro Ala Glu Lys Arg		
	915	920 925
Tyr Asp Ile Gln Leu Ala Val Gln Thr Leu Lys Thr Ile Leu Ala Leu		
	930	935 940
Gly Tyr Tyr Ile Ser Leu Asp Lys Pro Pro Ala Arg Ile Arg Asn Val		
	945	950 955 960
Arg Leu Pro Asn Glu Pro Phe Met Gln Ser Asn Gly Tyr Lys Pro Ala		
	965	970 975
Pro Leu Asp Leu Ser Ala Val Thr Leu Thr Pro Lys Met Asp Glu Leu		
	980	985 990
Val Asp Gln Leu Ala Glu Asn Thr His Asn Leu Trp Ala Arg Glu Arg		
	995	1000 1005
Ile Gln Gln Gly Trp Thr Tyr Gly Leu Asn Glu Asp Ser Asp Met		
	1010	1015 1020
His Arg Ser Pro His Leu Val Pro Tyr Pro Lys Val Asp Asp Ala		
	1025	1030 1035
Ile Lys Lys Ala Asn Arg Asp Thr Ala Ser Glu Thr Val Arg Thr		
	1040	1045 1050
Leu Leu Val Tyr Gly Tyr Met Leu Asp Pro Pro Thr Gly Glu Gln		
	1055	1060 1065
His Glu Ala Leu Leu Leu Glu Ala Ser Lys Gln Lys Gln Ala Asp		
	1070	1075 1080
Phe Arg Thr Tyr Arg Ala Glu Lys Asn Tyr Ala Val Ser Ser Gly		
	1085	1090 1095
Lys Trp Tyr Phe Glu Phe Glu Ile Leu Thr Ala Gly Pro Met Arg		
	1100	1105 1110
Val Gly Trp Ala His Ala Asp Met Ala Pro Gly Met Met Leu Gly		
	1115	1120 1125
Gln Asp Glu Asn Ser Trp Ala Phe Asp Gly Tyr Asn Glu Glu Lys		
	1130	1135 1140
Val Tyr Ser Gly Asn Thr Glu Ser Phe Gly Lys Gln Trp Ala Val		
	1145	1150 1155
Gly Asp Val Val Gly Val Phe Leu Asp Leu Ile Asp Lys Thr Ile		

1160		1165		1170
Ser Phe Ser Leu Asn Gly Glu Leu Leu Met Asp Ala Leu Gly Gly				
1175		1180		1185
Glu Thr Thr Phe Ala Asp Val Gln Gly Asp Asn Phe Val Pro Ala				
1190		1195		1200
Cys Thr Leu Gly Val Gly Gln Lys Ala Arg Leu Thr Tyr Gly Gln				
1205		1210		1215
Asp Val Asn Thr Leu Lys Tyr Phe Thr Thr Cys Gly Leu Gln Glu				
1220		1225		1230
Gly Tyr Glu Pro Phe Cys Val Asn Met Lys Arg Asp Val Thr His				
1235		1240		1245
Trp Tyr Thr Lys Asp Gln Pro Ile Phe Glu Asn Thr Asp Glu Met				
1250		1255		1260
Ile Asp Thr Arg Ile Asp Val Thr Arg Ile Pro Ala Gly Ser Asp				
1265		1270		1275
Thr Pro Pro Cys Leu Lys Ile Ser His Asn Thr Phe Glu Thr Met				
1280		1285		1290
Glu Lys Ala Asn Trp Glu Phe Leu Arg Leu Ser Leu Pro Val Ile				
1295		1300		1305
Cys His Asn Glu Phe Ile Asp Glu Ala Glu Lys Ala Arg Arg Trp				
1310		1315		1320
Val Glu Ile Lys Asp Arg Gln Gln Ile Leu Met Lys Glu Ala Val				
1325		1330		1335
Glu Ala Gln Met Pro Ala His Ile Asp Gln Ile Met Arg Ser Gly				
1340		1345		1350
Phe Thr Met Asn Asp Ile Lys Gly Leu His Tyr Glu Asp Asn Gln				
1355		1360		1365
Glu Glu Leu Pro Ser Ser Lys Met Lys Arg Leu Pro Ser Arg Pro				
1370		1375		1380
Pro Arg Lys Gly Ser Met Thr Arg Gly Gln Val Asn Gly Met His				
1385		1390		1395
Arg Ser Thr Ser Glu Ala Glu Met Ala Lys Tyr Asp Leu Gly Ala				
1400		1405		1410
Gln Gly Leu Thr Pro Asp Asp Lys Lys Asp Lys Arg Gly Arg Ser				
1415		1420		1425
Pro Phe Lys Phe Phe Arg Ser Lys Arg Gly Glu Ser Ser Asp Arg				
1430		1435		1440
Ala Lys Ser Arg Lys Ser Lys Thr Pro Asp Pro Phe Ser Asp Thr				
1445		1450		1455
Glu Val Ser Pro Glu Arg Gly Ala Arg Arg Pro Asn Pro Gln Ile				

1460		1465		1470
Lys Val Ser Gln Ser Asn Ala Gln Met Ala Thr Pro Thr Gln Asp				
1475		1480		1485
Arg Lys Gln Met Thr Thr Ser Thr Leu Ala Gln Ser Ala Thr Glu				
1490		1495		1500
Thr Val Gly Asn Glu Ile Phe Asp Ala Glu Cys Leu Lys Leu Ile				
1505		1510		1515
Asn Glu Tyr Phe Tyr Gly Val Arg Ile Tyr Pro Gly Gln Asp Pro				
1520		1525		1530
Thr His Val Tyr Ile Gly Trp Val Thr Thr Gln Tyr His Leu His				
1535		1540		1545
Ser Lys Asp Phe Asn Gln Ser Lys Val Thr Lys Ser Ser Val Ile				
1550		1555		1560
Ile Ile Asp Asp Tyr Asp Arg Val Val Glu Asn Val Asn Arg Gln				
1565		1570		1575
Ser Cys Tyr Met Val Arg Ala Asp Glu Leu Tyr Asn Glu Val Met				
1580		1585		1590
Ala Glu Ala Thr Ala Lys Gly Ala Ser Gln Gly Met Phe Ile Gly				
1595		1600		1605
Cys Ser Val Asp Thr Ser Thr Gly Ser Val Ser Phe Thr Cys Glu				
1610		1615		1620
Gly Lys Asp Thr Ser Phe Lys Phe Lys Met Glu Pro Glu Thr Lys				
1625		1630		1635
Leu Phe Pro Ala Ile Phe Val Glu Ala Thr Ser Lys Glu Ile Leu				
1640		1645		1650
Gln Ile Glu Leu Gly Arg Ser Ala Thr Ser Leu Pro Leu Ser Ala				
1655		1660		1665
Ala Val Leu Pro Thr Ser Asp Lys His Val Ile Pro Gln Phe Pro				
1670		1675		1680
Pro Arg Leu Lys Val Gln Cys Leu Lys Pro His Gln Trp Ala Arg				
1685		1690		1695
Val Pro Asn Gln Ser Leu Gln Val His Ala Leu Lys Leu Ser Asp				
1700		1705		1710
Ile Arg Gly Trp Ser Met Leu Cys Glu Asp Ala Val Ser Met Leu				
1715		1720		1725
Ala Leu His Ile Pro Glu Glu Asp Arg Cys Ile Asp Ile Leu Glu				
1730		1735		1740
Leu Ile Glu Met Asp Lys Leu Leu Ser Phe His Ser His Thr Leu				
1745		1750		1755
Thr Leu Tyr Ala Ala Leu Cys Tyr Gln Ser Asn Tyr Arg Ala Ala				

1760	1765	1770
His Ala Leu Cys Thr His Val Asp Gln Lys Gln Leu Leu Tyr Ala		
1775	1780	1785
Ile Gln Ser Gln Tyr Met Ser Gly Pro Leu Arg Gln Gly Phe Tyr		
1790	1795	1800
Asp Leu Leu Ile Ala Leu His Leu Glu Ser His Ala Thr Thr Met		
1805	1810	1815
Glu Ala Cys Lys Asn Glu Phe Val Ile Pro Leu Gly Pro Glu Leu		
1820	1825	1830
Lys Ala Leu Tyr Glu Glu Pro Asp Met Gly His Ser Leu Arg Ser		
1835	1840	1845
Leu Gln Thr Glu Ser Val Arg Pro Gln Met Lys Met Thr Asp Ile		
1850	1855	1860
Ala Glu Ser Ile Thr Glu Ile Ser Asn Leu Tyr Ser Pro Tyr Phe		
1865	1870	1875
Pro Leu Glu Val Val Arg Glu Phe Val Met Gln Ala Leu Ala Glu		
1880	1885	1890
Ala Val Glu Thr Asn Gln Val His Asn Arg Asp Pro Val Gly Gly		
1895	1900	1905
Ser Asn Glu Asn Leu Phe Leu Pro Leu Ile Lys Leu Val Asp Arg		
1910	1915	1920
Leu Leu Leu Val Gly Met Met Arg Asp Glu Asp Val Glu Lys Leu		
1925	1930	1935
Leu Ile Met Thr Asn Pro Glu Thr Trp Asp Pro Ser Phe Asp Lys		
1940	1945	1950
Glu Gly Lys Asp Glu His Arg Lys Gly Leu Leu His Met Lys Met		
1955	1960	1965
Ala Glu Gly Ala Lys Leu Gln Met Cys Tyr Leu Leu Gln His Leu		
1970	1975	1980
Asn Asp Ile Gln Leu Arg His Arg Val Glu Ala Ile Ile Ala Phe		
1985	1990	1995
Ala His Asp Phe Val Gly Asp Leu Gln Thr Asp Gln Leu Arg Arg		
2000	2005	2010
Tyr Thr Glu Ile Lys Gln Ser Asp Leu Pro Ser Ala Val Ala Ala		
2015	2020	2025
Lys Lys Thr Arg Glu Phe Arg Cys Pro Pro Arg Glu Gln Met Asn		
2030	2035	2040
Ala Ile Leu Ser Phe Lys His Leu Glu Glu Glu Asp Lys Glu Asn		
2045	2050	2055
Cys Pro Cys Gly Glu Glu Leu Ile Ala Arg Met Asn Glu Phe His		



2060	2065	2070
Asp Thr Leu Met Ala His Val 2075	Ser Leu His Ala 2080	Leu Gln Glu Pro 2085
Asp Ala Ala Glu Asn Gln Glu 2090	Pro Glu Ala Lys 2095	Pro Gly Ala Phe 2100
Gly Lys Leu Tyr Asn Ile Ile 2105	Asn Thr Val Lys 2110	Glu Leu Glu Glu 2115
Glu Ala Lys Ala Ile Glu Glu 2120	Pro Pro Lys Lys 2125	Thr Pro Glu Glu 2130
Lys Phe Arg Lys Val Leu Ile 2135	Gln Thr Ile Val 2140	Asn Trp Ala Glu 2145
Glu Ser Gln Ile Glu Thr Pro 2150	Lys Leu Val Arg 2155	Glu Met Phe Ser 2160
Leu Leu Val Arg Gln Tyr Asp 2165	Ala Val Gly Glu 2170	Leu Ile Arg Ala 2175
Leu Glu Lys Thr Tyr Val Ile 2180	Asn Ala Lys Thr 2185	Lys Leu Asp Val 2190
Ala Glu Met Trp Val Gly Leu 2195	Ser Gln Ile Arg 2200	Ala Leu Leu Pro 2205
Val Gln Met Ser Gln Glu Glu 2210	Glu Glu Leu Met 2215	Arg Lys Arg Leu 2220
Trp Lys Leu Val Asn Asn His 2225	Thr Phe Phe Gln 2230	His Pro Asp Leu 2235
Ile Arg Val Leu Arg Val His 2240	Glu Asn Val Met 2245	Ala Val Met Met 2250
Asn Thr Leu Gly Arg Arg Ala 2255	Gln Ala Gln Ser 2260	Asp Ala Gln Pro 2265
Ser Ser Gln Pro Val Ala Glu 2270	Asp Asn Lys Glu 2275	Lys Asp Thr Ser 2280
His Glu Met Val Val Ala Cys 2285	Cys Arg Phe Leu 2290	Cys Tyr Phe Cys 2295
Arg Thr Gly Arg Gln Asn Gln 2300	Lys Ala Met Phe 2305	Asp His Phe Asp 2310
Phe Leu Leu Glu Asn Ser Asn 2315	Ile Leu Leu Ser 2320	Arg Pro Ser Leu 2325
Arg Gly Ser Thr Pro Leu Asp 2330	Val Ala Tyr Ser 2335	Ser Leu Met Glu 2340
Asn Thr Glu Leu Ala Leu Ala 2345	Leu Arg Glu His 2350	Tyr Leu Glu Lys 2355
Ile Ala Val Tyr Leu Ser Arg	Cys Gly Leu Gln Ser	Asn Ser Glu

2360	2365	2370
Leu Val Glu Lys Gly Tyr Pro Asp Leu Gly Trp Asp Pro Val Glu 2375 2380 2385		
Gly Glu Arg Tyr Leu Asp Phe Leu Arg Phe Cys Val Trp Val Asn 2390 2395 2400		
Gly Glu Ser Val Glu Glu Asn Ala Asn Leu Val Ile Arg Leu Leu 2405 2410 2415		
Ile Arg Arg Pro Glu Cys Leu Gly Pro Ala Leu Arg Gly Glu Gly 2420 2425 2430		
Glu Gly Leu Leu Lys Ala Ile Val Asp Ala Asn Lys Met Ser Glu 2435 2440 2445		
Arg Ile Ala Asp Arg Arg Lys Leu Arg Glu Met Glu Gln Glu Gly 2450 2455 2460		
Asp Val Asn Phe Ser His Pro Leu Pro Glu Ser Asp Glu Asp Glu 2465 2470 2475		
Asp Tyr Ile Asp Thr Gly Ala Ala Ile Leu Asn Phe Tyr Cys Thr 2480 2485 2490		
Leu Val Asp Leu Leu Gly Arg Cys Ala Pro Asp Ala Gly Val Ile 2495 2500 2505		
Ala Leu Gly Lys Asn Glu Ser Leu Arg Ala Arg Ala Ile Leu Arg 2510 2515 2520		
Ser Leu Val Pro Leu Glu Asp Leu Gln Gly Val Leu Ser Leu Arg 2525 2530 2535		
Phe Thr Leu Asn Asn Pro Ala Ala Gly Glu Glu Arg Pro Lys Ser 2540 2545 2550		
Asp Met Pro Ser Gly Leu Ile Pro Gly His Lys Gln Ser Val Gly 2555 2560 2565		
Leu Phe Leu Glu Arg Val Tyr Gly Ile Glu Thr Gln Glu Leu Phe 2570 2575 2580		
Tyr Lys Leu Leu Glu Glu Ala Phe Leu Pro Asp Leu Arg Ala Ala 2585 2590 2595		
Thr Met Leu Asp Arg Asn Asp Gly Cys Glu Ser Asp Met Ala Leu 2600 2605 2610		
Ser Met Asn Arg Tyr Ile Gly Asn Ser Ile Leu Pro Leu Leu Ile 2615 2620 2625		
Lys His Ala Tyr Phe Tyr Asn Glu Ala Glu Asn Tyr Ala Ser Leu 2630 2635 2640		
Leu Asp Ala Thr Leu His Thr Val Tyr Arg Leu Ser Lys Asn Arg 2645 2650 2655		
Met Leu Thr Lys Gly Gln Arg Glu Ala Val Ser Asp Phe Leu Val		

2660					2665					2670				
Ala	Leu	Thr	Ser	Ala	Met	Gln	Pro	Ser	Met	Leu	Leu	Lys	Leu	Leu
2675						2680					2685			
Arg	Lys	Leu	Thr	Val	Asp	Val	Ser	Lys	Leu	Ser	Glu	Tyr	Thr	Thr
2690						2695					2700			
Val	Ala	Leu	Arg	Leu	Leu	Thr	Leu	His	Tyr	Glu	Arg	Cys	Ala	Lys
2705						2710					2715			
Tyr	Tyr	Gly	Ser	Thr	Gly	Ala	Gly	Gln	Gly	Ala	Phe	Gly	Ala	Ser
2720						2725					2730			
Ser	Asp	Glu	Glu	Lys	Arg	Leu	Thr	Met	Met	Leu	Phe	Ser	Asn	Ile
2735						2740					2745			
Phe	Asp	Ser	Leu	Ser	Lys	Met	Asp	Tyr	Glu	Pro	Glu	Leu	Phe	Gly
2750						2755					2760			
Lys	Ala	Leu	Pro	Cys	Leu	Ile	Ala	Ile	Gly	Cys	Ala	Leu	Pro	Pro
2765						2770					2775			
Asp	Tyr	Ser	Leu	Ser	Lys	Asn	Tyr	Asp	Asp	Glu	Phe	Tyr	Gly	Lys
2780						2785					2790			
Glu	Gln	Ala	Ala	Gly	Asp	Leu	Asp	Asn	Pro	Gln	Tyr	Asp	Pro	Gln
2795						2800					2805			
Pro	Ile	Asn	Thr	Ser	Ser	Val	Ala	Leu	Asn	Asn	Asp	Leu	Asn	Thr
2810						2815					2820			
Ile	Val	Gln	Lys	Phe	Ser	Glu	His	Tyr	His	Asp	Ala	Trp	Ala	Ser
2825						2830					2835			
Arg	Lys	Ile	Glu	Asn	Gly	Trp	Val	Tyr	Gly	Glu	Gly	Trp	Ser	Asp
2840						2845					2850			
Ser	Gln	Lys	Thr	His	Pro	Arg	Leu	Lys	Pro	Tyr	Asn	Met	Leu	Asn
2855						2860					2865			
Asp	Tyr	Glu	Lys	Glu	Arg	Tyr	Lys	Glu	Pro	Val	Arg	Glu	Ser	Leu
2870						2875					2880			
Lys	Ala	Leu	Leu	Ala	Ile	Gly	Trp	Ser	Val	Glu	His	Ser	Glu	Val
2885						2890					2895			
Asp	Ile	Pro	Ser	Asn	Asn	Arg	Ser	Ser	Met	Arg	Arg	Gln	Ser	Lys
2900						2905					2910			
Ser	Gly	Gly	Arg	Pro	Pro	Glu	Ile	Val	Thr	Asp	Ser	Ala	Thr	Pro
2915						2920					2925			
Phe	Asn	Tyr	Asn	Pro	His	Pro	Val	Asp	Met	Thr	Asn	Leu	Thr	Leu
2930						2935					2940			
Ser	Arg	Glu	Met	Gln	Asn	Met	Ala	Glu	Arg	Leu	Ala	Asp	Asn	Ala
2945						2950					2955			
His	Asp	Ile	Trp	Ala	Lys	Lys	Lys	Lys	Glu	Glu	Leu	Val	Thr	Asn

2960					2965					2970				
Gly	Gly	Gly	Ile	His	Pro	Gln	Leu	Val	Pro	Tyr	Asp	Leu	Leu	Thr
2975						2980					2985			
Asp	Lys	Glu	Lys	Lys	Lys	Asp	Arg	Glu	Arg	Ser	Gln	Glu	Phe	Leu
2990						2995					3000			
Lys	Tyr	Leu	Gln	Tyr	Gln	Gly	Tyr	Lys	Leu	His	Arg	Pro	Ser	Lys
3005						3010					3015			
Ala	Pro	Gln	Ser	Asp	Thr	Glu	Gln	Thr	Thr	Thr	Gly	Val	Ala	Ile
3020						3025					3030			
Glu	Leu	Arg	Phe	Ala	Tyr	Ser	Leu	Leu	Glu	Lys	Leu	Ile	Gln	Tyr
3035						3040					3045			
Ile	Asp	Arg	Ala	Thr	Ile	Asn	Met	Lys	Leu	Leu	Lys	Pro	Ser	Thr
3050						3055					3060			
Thr	Phe	Ser	Arg	Arg	Ser	Ser	Phe	Lys	Thr	Ser	Thr	Arg	Asp	Ile
3065						3070					3075			
Lys	Phe	Phe	Ser	Lys	Val	Val	Leu	Pro	Leu	Met	Glu	Lys	Tyr	Phe
3080						3085					3090			
Ser	Thr	His	Arg	Asn	Tyr	Phe	Ile	Ala	Val	Ala	Thr	Ala	Thr	Asn
3095						3100					3105			
Asn	Val	Gly	Ala	Ala	Ser	Leu	Lys	Glu	Lys	Glu	Met	Val	Ala	Ala
3110						3115					3120			
Leu	Phe	Cys	Lys	Leu	Ala	Ser	Leu	Leu	Arg	Ser	Arg	Leu	Ala	Ala
3125						3130					3135			
Phe	Gly	Pro	Asp	Val	Arg	Ile	Thr	Val	Arg	Cys	Leu	Gln	Val	Leu
3140						3145					3150			
Val	Lys	Gly	Ile	Asp	Ala	Lys	Ser	Leu	Val	Lys	Asn	Cys	Pro	Glu
3155						3160					3165			
Phe	Ile	Arg	Thr	Ser	Met	Leu	Thr	Phe	Phe	Asn	Asn	Val	Ala	Asp
3170						3175					3180			
Asp	Val	Gly	His	Thr	Ile	Met	Asn	Leu	Gln	Asp	Gly	Lys	Tyr	Ala
3185						3190					3195			
His	Leu	Arg	Gly	Thr	His	Leu	Lys	Thr	Ser	Thr	Ser	Leu	Gly	Tyr
3200						3205					3210			
Ile	Asn	Gly	Val	Leu	Leu	Pro	Ile	Leu	Thr	Ala	Lys	Phe	Asp	His
3215						3220					3225			
Leu	Ala	Asn	Cys	Glu	Tyr	Gly	Ala	Asp	Leu	Leu	Leu	Asp	Glu	Ile
3230						3235					3240			
Gln	Val	Ala	Ser	Tyr	Lys	Met	Leu	Gly	Ser	Leu	Tyr	Ala	Leu	Gly
3245						3250					3255			
Thr	Asp	Ala	Ser	Leu	Thr	His	Asp	Arg	Lys	Tyr	Leu	Lys	Thr	Glu

3260	3265	3270
Ile Glu Arg His Lys Pro	Ala Leu Gly Ser Cys	Leu Gly Ala Phe
3275	3280	3285
Ser Ser Thr Phe Pro Val	Ala Phe Leu Glu Pro	His Leu Asn Lys
3290	3295	3300
His Asn Gln Phe Ser Leu	Leu Asn Arg Ile Ala	Asp His Ser Leu
3305	3310	3315
Glu Ala Gln Asp Ile Met	Gln Lys Met Glu Gln	Cys Met Pro Thr
3320	3325	3330
Leu Glu Thr Ile Leu Gly	Glu Val Asp Gln Phe	Val Glu Ser Asp
3335	3340	3345
Lys Thr Tyr Asn Glu Ala	Pro His Ile Ile Asp	Val Val Leu Pro
3350	3355	3360
Leu Leu Cys Ser Tyr Leu	Pro Phe Trp Trp Ala	Gln Gly Pro Asp
3365	3370	3375
Asn Val Thr Pro Thr Gly	Gly Asn His Val Thr	Met Val Thr Ala
3380	3385	3390
Glu His Met Asn Gln Leu	Leu Lys Asn Val Leu	Lys Leu Ile Lys
3395	3400	3405
Lys Asn Ile Gly Asn Glu	Asn Ala Pro Trp Met	Thr Arg Ile Ala
3410	3415	3420
Thr Tyr Thr Gln Gln Ile	Ile Ile Asn Ser Ser	Glu Glu Leu Leu
3425	3430	3435
Arg Asp Ser Phe Leu Pro	Leu Ala Glu Arg Val	Arg Lys Arg Thr
3440	3445	3450
Asp Asn Met Phe His Lys	Glu Glu Ser Leu Arg	Gly Phe Ile Lys
3455	3460	3465
Ser Ser Thr Asp Asp Thr	Ser Gln Val Glu Ser	Gln Ile Gln Glu
3470	3475	3480
Asp Trp Gln Leu Leu Val	Arg Asp Ile Tyr Ser	Phe Tyr Pro Leu
3485	3490	3495
Leu Ile Lys Tyr Val Asp	Leu Gln Arg Asn His	Trp Leu Arg Asn
3500	3505	3510
Asn Val Pro Glu Ala Glu	Glu Leu Tyr Asn His	Val Ala Glu Ile
3515	3520	3525
Phe Asn Ile Trp Ser Lys	Ser Gln Tyr Phe Leu	Lys Glu Glu Gln
3530	3535	3540
Asn Phe Ile Ser Ala Asn	Glu Ile Asp Asn Met	Val Leu Ile Met
3545	3550	3555
Pro Thr Ala Thr Arg Arg	Val Thr Ala Val Thr	Asp Gly Thr Pro

3560		3565		3570
Gln Gly Gly Gly Lys Lys Lys Lys Lys His Arg Asp Lys Lys Arg				
3575		3580		3585
Asp Lys Asp Lys Glu Val Gln Ala Ser Leu Met Val Ala Cys Leu				
3590		3595		3600
Lys Arg Leu Leu Pro Val Gly Leu Asn Leu Phe Ala Gly Arg Glu				
3605		3610		3615
Gln Glu Leu Val Gln His Cys Lys Asp Arg Phe Leu Lys Lys Met				
3620		3625		3630
Ser Glu Gln Asp Val Ala Glu Phe Ala Lys Thr Gln Leu Thr Leu				
3635		3640		3645
Pro Asp Lys Ile Asp Pro Ala Asp Glu Met Ser Trp Gln His Tyr				
3650		3655		3660
Leu Tyr Ser Lys Leu Gly Ser Lys Ser Lys Ser Asn Ile Thr Val				
3665		3670		3675
Glu Thr Ala Glu Asn Lys Ala Lys Ile Ile Asp Asp Thr Val Glu				
3680		3685		3690
Arg Ile Val Ala Met Ser Lys Val Leu Phe Gly Leu His Met Ile				
3695		3700		3705
Asp His Pro Gln Gln Met Ser Lys Asn Val Tyr Arg Ser Val Val				
3710		3715		3720
Ser Ile Gln Arg Lys Arg Ala Val Ile Ala Cys Phe Arg Gln Thr				
3725		3730		3735
Ser Leu His Ser Leu Pro Arg His Arg Ala Cys Asn Ile Phe Ala				
3740		3745		3750
Arg Thr Tyr Tyr Glu Leu Trp Leu Glu Glu Glu Asn Ile Gly Gln				
3755		3760		3765
Glu Val Met Ile Glu Asp Leu Thr Gln Ser Phe Glu Asp Ala Glu				
3770		3775		3780
Leu Lys Lys Ser Asp Val Val Glu Glu Gly Glu Lys Pro Asp Pro				
3785		3790		3795
Leu Thr Gln Leu Val Thr Thr Phe Cys Arg Gly Ala Met Thr Glu				
3800		3805		3810
Arg Ser Gly Ala Leu Gln Glu Asp Pro Leu Tyr Met Ser Tyr Ala				
3815		3820		3825
His Ile Ile Ala Lys Ser Cys Gly Glu Glu Glu Glu Glu Gly Gly				
3830		3835		3840
Gly Glu Glu Glu Gly Gly Gly Glu Ala Glu Ala Glu Asp Glu				
3845		3850		3855
Gly Arg Ala Ser Ile His Glu Gln Glu Met Glu Lys Gln Lys Leu				

3860		3865		3870
Leu Phe His Gln Ala Arg	Leu Ala Asp Arg Gly Val Ala Glu Met			
3875	3880	3885		
Val Leu Leu His Ile Ser	Ala Ser Lys Gly Leu Pro Ser Glu Met			
3890	3895	3900		
Val Met Lys Thr Leu Gln	Leu Gly Ile Ser Ile Leu Arg Gly Gly			
3905	3910	3915		
Asn Ile Asp Ile Gln Met	Gly Met Leu Asn His Leu Lys Asp Lys			
3920	3925	3930		
Lys Asp Val Gly Phe Phe	Thr Ser Ile Ala Gly Leu Met Asn Ser			
3935	3940	3945		
Cys Ser Val Leu Asp Leu	Asp Ala Phe Glu Arg Asn Thr Lys Ala			
3950	3955	3960		
Glu Gly Leu Gly Val Gly	Leu Glu Gly Ala Ala Gly Glu Lys Asn			
3965	3970	3975		
Met His Asp Ala Glu Phe	Thr Cys Ala Leu Phe Arg Phe Ile Gln			
3980	3985	3990		
Leu Thr Cys Glu Gly His	Asn Leu Asp Trp Gln Asn Tyr Leu Arg			
3995	4000	4005		
Thr Gln Ala Gly Asn Thr	Thr Thr Val Asn Val Val Ile Cys Thr			
4010	4015	4020		
Val Asp Tyr Leu Leu Arg	Leu Gln Glu Ser Ile Met Asp Phe Tyr			
4025	4030	4035		
Trp His Tyr Ser Ser Lys	Glu Leu Ile Asp Pro Ala Gly Lys Ala			
4040	4045	4050		
Asn Phe Phe Lys Ala Ile	Gly Val Ala Ser Gln Val Phe Asn Thr			
4055	4060	4065		
Leu Thr Glu Val Ile Gln	Gly Pro Cys Thr Gln Asn Gln Gln Ala			
4070	4075	4080		
Leu Ala His Ser Arg Leu	Trp Asp Ala Val Gly Gly Phe Leu Phe			
4085	4090	4095		
Leu Phe Ser His Met Gln	Asp Lys Leu Ser Lys His Ser Ser Gln			
4100	4105	4110		
Val Asp Leu Leu Lys Glu	Leu Leu Asn Leu Gln Lys Asp Met Ile			
4115	4120	4125		
Thr Met Met Leu Ser Met	Leu Glu Gly Asn Val Val Asn Gly Thr			
4130	4135	4140		
Ile Gly Lys Gln Met Val	Asp Thr Leu Val Glu Ser Ala Ser Asn			
4145	4150	4155		
Val Glu Leu Ile Leu Lys	Tyr Phe Asp Met Phe Leu Lys Leu Lys			

4160	4165	4170
Asp Leu Thr Ser Ser Ala Ser Phe Gln Glu Ile Asp Ala Asn Asn	4180	4185
4175		
Asp Gly Trp Val Leu Pro Lys Asp Phe Lys Glu Lys Met Glu Gln	4195	4200
4190		
Gln Lys Ser Tyr Thr Pro Glu Glu Ile Glu Phe Leu Leu Ala Cys	4210	4215
4205		
Cys Glu Thr Asn His Asp Gly Lys Leu Asp Tyr Ile Gly Phe Cys	4225	4230
4220		
Asp Arg Phe His Glu Pro Ala Lys Glu Ile Gly Phe Asn Leu Ala	4240	4245
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Val Leu Leu Thr Asn Leu Ser Glu His Met Pro Asn Glu Pro Arg	4255	4260
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Leu Ala Arg Phe Leu Glu Thr Ala Gly Ser Val Leu Asn Tyr Phe	4270	4275
4265		
Glu Pro Phe Leu Gly Arg Ile Glu Ile Met Gly Gly Ser Lys Arg	4285	4290
4280		
Ile Glu Arg Val Tyr Phe Glu Ile Lys Glu Ser Asn Ile Glu Gln	4300	4305
4295		
Trp Glu Lys Pro Gln Ile Lys Glu Ser Lys Arg Ala Phe Phe Tyr	4315	4320
4310		
Ser Ile Val Thr Glu Gly Gly Asp Lys Glu Lys Leu Glu Ala Phe	4330	4335
4325		
Val Asn Phe Cys Glu Asp Ala Ile Phe Glu Met Thr His Ala Ser	4345	4350
4340		
Gly Leu Met Ala Ala Ser Glu Glu Ser Val Gly Gly Thr Lys Asn	4360	4365
4355		
Arg Glu Ala Ser Tyr Met Tyr Met Gly Asp Asp Asp Asp Glu Arg	4375	4380
4370		
Ala Gly Lys Asp Pro Phe Arg Arg Gly Leu Gln Ser Val Lys Asp	4390	4395
4385		
Gly Val Ala Thr Ala Phe Ser Ser Leu Ser Pro Ser Asn Ile Lys	4405	4410
4400		
Ala Lys Ile Ala Asp Met Gln Gln Met Pro Pro Ala Glu Leu Ala	4420	4425
4415		
Val Gly Phe Phe Lys Met Phe Phe Tyr Leu Phe Tyr Tyr Leu Gly	4435	4440
4430		
Tyr Gly Val Leu Val Val Val Arg Tyr Ile Phe Gly Val Leu Leu	4450	4455
4445		
Gly Leu Met Arg Gly Pro Gln Thr Asp Glu Pro Pro Pro Glu Pro		



4460		4465		4470
Thr Glu Glu Glu Lys Ile Gly Gln Leu Arg His Arg Leu Leu Ala				
4475		4480		4485
Thr Gln Ser Ser Arg His Leu Pro Ala Leu Pro Pro Ala Asp Asp				
4490		4495		4500
Thr Gly Gln Met Gln Val Pro Ala Phe Gly Leu Asp Ile Thr Lys				
4505		4510		4515
Glu Asp Asn Gly Gln Ile Gln Val Lys Pro His Glu Ser Pro Ser				
4520		4525		4530
Thr Ser Thr Pro Ser Ser Gly Glu Glu Ala Glu Val Ser Pro Asp				
4535		4540		4545
Glu Ser Ala Asp His Thr Glu Glu Gln Arg Pro Pro Ser Leu Ile				
4550		4555		4560
Asp Leu Leu Gly Gly Glu Gln Ala Lys Lys Gln Ala Gln Glu Arg				
4565		4570		4575
Met Glu Ala Gln Ala Ala Gln Gln Ala Ala Met Ser Ala Ile Glu				
4580		4585		4590
Ala Glu Ser Lys Lys Ala Val Gln Gly Pro Ala Pro Ser Ala Leu				
4595		4600		4605
Ser Gln Val Asp Leu Ser Gln Tyr Thr Arg Arg Ala Val Ser Phe				
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Leu Ala Arg Asn Phe Tyr Asn Leu Lys Tyr Val Ala Leu Val Leu				
4625		4630		4635
Ala Phe Cys Ile Asn Phe Val Leu Leu Phe Tyr Lys Val Ser Thr				
4640		4645		4650
Leu Asp Gly Glu Gly Gly Glu Gly Ser Gly Leu Gly Asp Ile Ile				
4655		4660		4665
Ala Gly Gly Gly Ser Gly Ser Gly Ala Gly Ser Gly Ser Gly Asp				
4670		4675		4680
Gly Ser Gly Glu Ser Gly Glu Asp Asp Asp Ala Leu Glu Val Val				
4685		4690		4695
His Ile Asp Glu Asp Phe Phe Tyr Met Glu His Val Ile Lys Met				
4700		4705		4710
Ala Ala Val Leu His Ser Ile Val Ser Leu Ala Ile Leu Ile Gly				
4715		4720		4725
Tyr Tyr His Leu Lys Val Pro Leu Ala Ile Phe Lys Arg Glu Lys				
4730		4735		4740
Glu Ile Ala Arg Lys Leu Glu Phe Asp Gly Leu Tyr Ile Ala Glu				
4745		4750		4755
Arg Pro Glu Asp Asp Asp Leu Lys Ser His Trp Asp Lys Leu Val				

4760	4765	4770
Ile Ser Ala Lys Ser Phe Pro Val Asn Tyr Trp Asp Lys Phe Val		
4775	4780	4785
Lys Lys Lys Val Arg Ala Lys Tyr Ser Glu Thr Tyr Asp Phe Asp		
4790	4795	4800
Ser Ile Ser Asn Met Leu Gly Met Glu Lys Thr Ser Phe Ser Ala		
4805	4810	4815
Gln Glu Glu Glu Gly Ser Lys Gly Leu Ile His Tyr Ile Ile Asn		
4820	4825	4830
Ile Asp Trp Arg Tyr Gln Val Trp Lys Ala Gly Val Thr Ile Thr		
4835	4840	4845
Asp Asn Ser Phe Leu Tyr Ser Leu Trp Tyr Phe Ser Phe Ser Val		
4850	4855	4860
Met Gly Asn Phe Asn Asn Phe Phe Phe Ala Ala His Leu Leu Asp		
4865	4870	4875
Val Ala Val Gly Phe Lys Thr Leu Arg Thr Ile Leu Gln Ser Val		
4880	4885	4890
Thr His Asn Gly Lys Gln Leu Val Leu Thr Val Met Leu Leu Thr		
4895	4900	4905
Ile Ile Val Tyr Ile Tyr Thr Val Ile Ala Phe Asn Phe Phe Arg		
4910	4915	4920
Lys Phe Tyr Val Gln Glu Glu Asp Asp Glu Val Asn Arg Asn Cys		
4925	4930	4935
His Asp Met Leu Thr Cys Phe Val Phe Asn Leu Tyr Lys Gly Val		
4940	4945	4950
Arg Ala Gly Gly Gly Ile Gly Asp Glu Leu Glu Pro Pro Asp Gly		
4955	4960	4965
Asp Asp Ser Glu Val Tyr Arg Ile Ile Phe Asp Ile Ser Phe Phe		
4970	4975	4980
Phe Phe Ile Ile Val Ile Leu Leu Ala Ile Leu Gln Gly Leu Ile		
4985	4990	4995
Ile Asp Ala Phe Gly Glu Leu Arg Asp Gln Leu Glu Ser Val Lys		
5000	5005	5010
Glu Asp Met Glu Ser Asn Cys Phe Ile Cys Gly Ile Asn Lys Asp		
5015	5020	5025
Tyr Phe Asp Lys Val Pro His Gly Phe Asp Thr His Val Gln Arg		
5030	5035	5040
Glu His Asn Leu Ala Asn Tyr Met Phe Phe Leu Met His Leu Ile		
5045	5050	5055
Asn Lys Pro Asp Thr Glu Tyr Thr Gly Gln Glu Thr Tyr Val Trp		

5060		5065		5070
Asn Met Tyr Thr Gln Arg Cys Trp Asp Phe Phe Pro Val Gly Asp				
5075		5080		5085
Cys Phe Arg Lys Gln Tyr Glu Asp Leu Met Gly Glu				
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 aaactgtgga tatgtttatg gtatgtatgt taaatttaggt ttcactattc cgtgttcggt 180  
 agataaatct atcggcatcc gatgctttcg tggatatttc agagggtacc caaaattaca 240  
 atcgattgcc aagtctcttt cgcttttaat tagctgttca cagtgggtcc aagcacgacc 300  
 cgaggaatct acttcacgca ccttgatgaa aaaccattct ctgggtctgg actaactgtg 360  
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